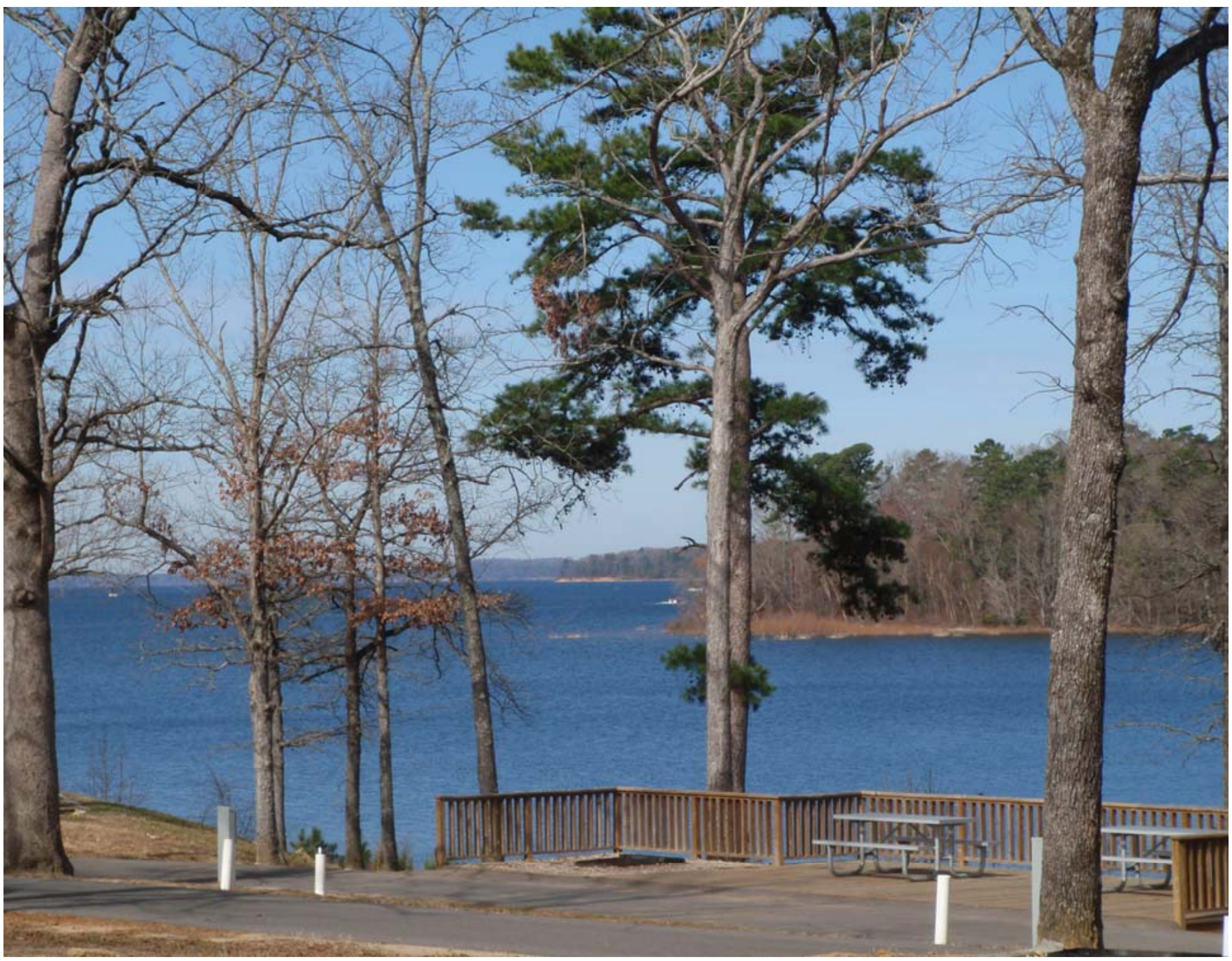
United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation
with the
Texas AgriLife
Research
and the
U.S. Forest
Service

# Soil Survey of Marion and Cass Counties, Texas



# How To Use This Soil Survey

### General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section “General Soil Map Units” for a general description of the soils in your area.

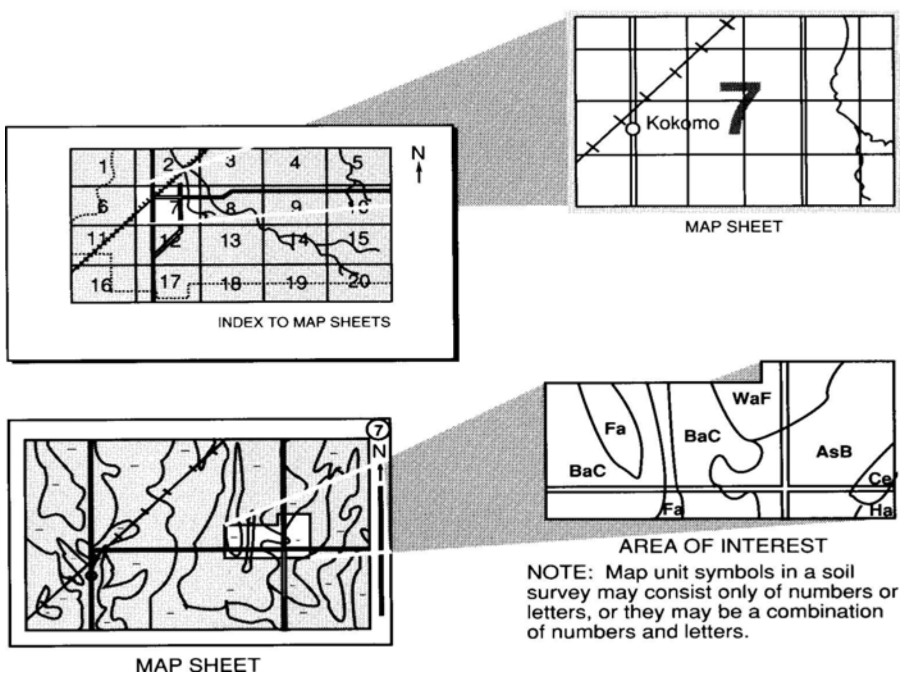
### Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the “Index to Map Sheets.”

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Go to the “Contents,” which lists the map units by symbol and name and shows the page where each map unit is described.

The “Contents” shows which table has data on a specific land use for each detailed soil map unit. Also see the “Contents” for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2003. Soil names and descriptions were approved in 2004. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2004. This survey was made cooperatively by the Natural Resources Conservation Service and the Texas AgriLife Research. The survey is part of the technical assistance furnished to the Marion and Cass Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.



**Cover: Lake O' the Pines offers many forms of recreational opportunities such as scenic views, wildlife, and outdoor activities. A picnic area located on the shore of Lake O' the Pines in an area of Tenaha loamy fine sand, 1 to 5 percent slopes.**

*Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is [http://www.nrcs.usda.gov](http://www.nrcs.usda.gov)*

# Contents

**Issued 2009**

# Foreword

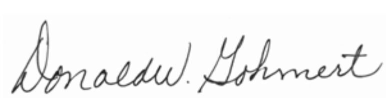
This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suitable for use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Texas AgriLife Research Center.



Donald W. Gohmert
State Conservationist
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# Soil Survey of Marion and Cass Counties, Texas

By Kirby Griffith, Natural Resources Conservation Services

Fieldwork by Kirby Griffith, Don Sabo, Joel Bolin, Levi Steptoe, Jr., Joseph Castille, Lynn Gray, and Kirthell Roberts Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with the Texas AgriLife Research

Marion and Cass Counties are in the northeastern part of Texas (fig. 1). The area of the two counties is 1,382 square miles, or 884,327 acres with 845,388 acres land and 38,939 acres of water. The northern boundary of Cass County is the Sulphur River bordering Bowie County. The southern boundary of Marion County is Little Cypress Bayou bordering Harrison County. The western boundaries are Upshur County bordering Morris County and Morris County bordering Cass County. The eastern boundary of Marion and Cass Counties are joining Miller County, Arkansas and Caddo Parish, Louisiana.

The County Seat is Jefferson for Marion County and Linden for Cass County.

Marion County drains to Caddo Lake, Lake O' the Pines and Cypress Bayou. Cass County is drained by Cypress Bayou and the Sulphur River.

The major enterprises in the area are timber and livestock production. About 59 percent of the counties are managed as woodland; 28 percent as improved pasture and 13 percent as native, cropland, built-up areas, recreational areas, wildlife habitat, urban land or water areas.

Marion and Cass Counties are in the Western Coastal Plain Major Land Resource Area and the local physiographic area in the East Texas Timberlands. The elevation ranges from 200 to 600 feet above sea level.

The area is characterized by its rolling topography. Slopes range from nearly level to very steep. The soil in these counties formed mainly under forested vegetation.

## General Nature of the Survey Area

This section provides general information about Marion and Cass Counties. It describes the history, agriculture, natural resources, and climate of the area.

### History

Marion County was organized is 1860 from Cass County. It was named for U.S. General Frances Marion. The City of Jefferson is the County Seat with a population of about 2,302 in 1999. The population of Marion County was approximately 10,886.

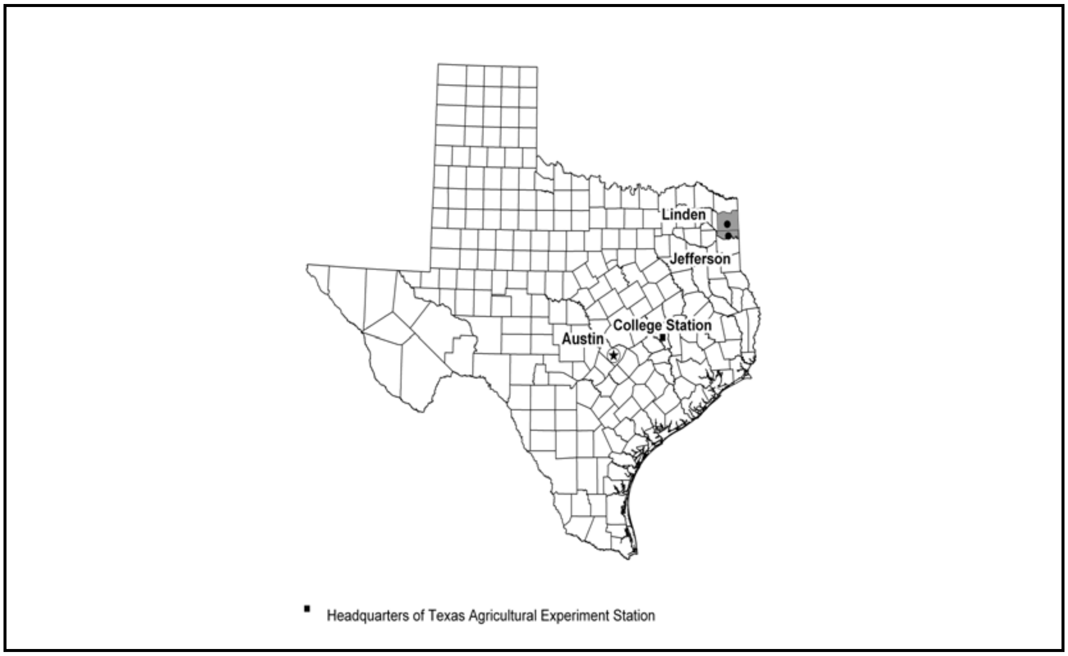


**Figure 1.—Location of Marion and Cass Counties, Texas.**

Cass County was organized in 1846 from Bowie County. It was named for U.S. Senator Lewis Cass. The City of Linden is the County Seat with a population of about 2,411. The population of Cass County was approximately 30,828.

## Agriculture

Fruits and vegetables are truck crops that are grown on a small amount of acreage in the counties. They are primarily peaches, pears, watermelons, tomatoes, and peas. They are used to supplement some family's income.

Most of the livestock in the county is raised in cow-calf enterprises. The livestock usually is pastured in the summer and fed hay and supplements in the winter. The main pasture grasses are coastal bermudagrass, common bermudagrass, and bahiagrass, which also provide hay for beef production. In many pastures, overseeding cool-season legumes improves the soil and provides additional forage.

Commercial timber production is a basis for much of the economy in the counties. Most of the timberland is privately owned tracts. Several paper companies own sizable tracts of timber. Each year pine and hardwood timber is harvested for pulpwood, sawlogs, crossties, posts, and poles.

## Natural Resources

Soil is the most important natural resource in Marion and Cass Counties. The production of livestock, forage, crops and timber all depend on the soil.

Oil and gas production is significant in Marion and Cass Counties. The numerous oil and gas wells in the counties are sources of income for many landowners. Oil and gas exploration, drilling, and servicing provide opportunities for employment.

Gravel and sand is mined throughout the survey area where the Reklaw Formation and Weches Formation outcrop within the Sparta Sand and Queen City Sand Formations. The sand and gravel are used mainly in construction of roads and highways.

**Figure 2.—Fishing and recreation on the lakes in the counties provide opportunities for many.**

Water, fish, and wildlife are important natural resources in the counties (fig. 2). Lake O'the Pines, Caddo Lake, Lake Wright Patman, and numerous smaller lakes and ponds provide water for agricultural, industrial, recreational, and domestic uses. Fish and wildlife provide opportunities for recreation and income to landowners in Marion and Cass Counties.

## Climate

Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from the First Order weather station in Shreveport, Louisiana.

Table 1 provides data on temperature and precipitation for the survey area as recorded at Jefferson in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 47 degrees F and the average daily minimum temperature is 35 degrees. The lowest temperature on record, which occurred at Jefferson on December 23, 1989, was -5 degrees. In summer, the average temperature is 80 degrees and the average daily maximum temperature is 92 degrees. The highest temperature, which occurred at Jefferson on September 1, 2000, was 108 degrees.

Growing degree days are shown in table 3. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 49 inches. Of this, about 27 inches, or 56 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 9.10 inches at Jefferson on April 26, 1921. Thunderstorms occur on about 56 days each year, and most occur between April and August.

The average relative humidity in mid-afternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 90 percent. The sun shines about 73 percent of the time in summer and about 53 percent in winter. The prevailing wind is from the south. Average wind speed is highest, around 10 miles per hour, in March.

# How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long

periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

# General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

## 1. Cuthbert-Bowie-Kirvin

***Map Unit Composition***

*Percent of the survey area:* 56 percent
Cuthbert soils—23 percent
Bowie soils—20 percent
Kirvin soils—18 percent
Minor soils—39 percent (Darco, Gallime, Iulus, Lilbert, Mantachie, and Tenaha soils, and water)

***Setting***

*Landscape:* Coastal plain
*Landform:* Cuthbert soils—Interfluve; Bowie soils—interfluves; Kirvin soils—ridges
*Geologic formation:* Cuthbert and Bowie soils—Queen City Sand; Kirvin soils—Reklaw
*Slope:* Cuthbert soils—5 to 15 percent; Bowie soils—2 to 5 percent; Kirvin soils—2 to 8 percent slopes

***Typical Profile***

**Cuthbert**

*Surface layer:* Brown fine sandy loam; strongly acid
*Subsoil layer*: Upper part—red clay; lower part—red clay loam
*Substratum*: Upper part—red, yellowish red, and gray clay loam; lower part—gray, yellowish red, brownish yellow, and dark yellowish brown sandy clay loam

**Bowie**

*Surface layer:* Dark grayish brown fine sandy loam
*Subsurface layer:* Light yellowish brown fine sandy loam
*Subsoil:* Upper part—yellowish brown sandy clay loam; middle part—strong brown sandy clay loam; lower part—60 percent light brownish gray, 25 percent red, and 15 percent strong brown clay loam

**Kirvin**

*Surface layer*: Brown very fine sandy loam; strongly acid
*Subsoil*: Upper part—red clay; lower part—red clay loam
*Substratum:* Strong brown and light gray stratified clay loam

### *Properties and Qualities*

**Cuthbert**

*Depth to restrictive feature:* 20 to 40 inches to densic material
*Drainage class:* Well drained
*Slowest permeability:* Slow (About 0.06 in/hr)
*Shrink-swell potential:* Moderate (About 4.5 LEP)
*Flooding hazard:* None

**Bowie**

*Depth to restrictive feature:* None
*Drainage class:* Well drained
*Slowest permeability:* Moderately slow (About 0.2 in/hr)
*Shrink-swell potential:* Low (About 1.5 LEP)
*Flooding hazard:* None

**Kirvin**

*Depth to restrictive feature:* 40 to 60 inches to densic material
*Drainage class:* Well drained
*Slowest permeability:* Moderately slow (About 0.2 in/hr)
*Shrink-swell potential:* Moderate (About 4.5 LEP)
*Flooding hazard:* None

### *Land Use*

**Cropland**
*Suitability:* Cuthbert soils—not suited; Bowie soils—well suited; Kirvin soils—poorly suited
*Management concerns:* Cuthbert soils—erosion hazard, rooting depth; Bowie soils—wind and water erosion; Kirvin soils—wind and water erosion, available water capacity, rooting depth

**Pastureland**

*Suitability:* Cuthbert soils—poorly suited; Bowie soils—well suited; Kirvin soils—poorly suited
*Management concerns:* Cuthbert soils—erosion hazard, rooting depth; Bowie soils—erosion, permeability; Kirvin soils—erosion hazard, available water capacity

**Woodland** (fig. 3)

*Suitability:* Cuthbert soils—poorly suited; Bowie soils—well suited; Kirvin soils—suited
*Management concerns:* Cuthbert soils—erosion hazard, steep slopes, rock and stone fragments on the surface, stickiness; Bowie soils—low strength; Kirvin soils—low strength, stickiness

**Urban land**

*Suitability:* Cuthbert soils—poorly suited; Bowie soils—poorly suited; Kirvin soils—poorly suited
*Management concerns:* Cuthbert soils—steep slopes, slow permeability, seepage, low strength, high shrink-swell potential; Bowie soils—seasonal high water table, permeability, low strength; Kirvin soils—moderate shrink-swell potential, high clay content, slow permeability, low strength

**Figure 3.—An area of Cuthbert gravelly fine sandy loam, 5 to 15 percent slopes. These areas are suitable for pasture and woodland.**

## 2. Tenaha-Lilbert-Darco

### *Map Unit Composition*

*Percent of the survey area:* 15 percent
Tenaha soils—24 percent
Lilbert soils—15 percent
Darco soils—16 percent
Minor Soils—45 percent (Bibb, Bowie, Cuthbert, Gallime, and Kirvin soils)

### *Setting*

*Landscape:* Coastal plain
*Landform:* Interfluve
*Geologic formation:* Queen City Sand
*Slope:* Cuthbert soils—5 to 15 percent; Lilbert soils—2 to 5 percent; Darco soils—2 to 15 percent

### *Typical Profile*

**Tenaha**

*Surface layer*: Brown loamy fine sand; strongly acid
*Subsurface layer:* Upper part—yellowish brown loamy fine sand; lower part—yellowish brown loamy fine sand
*Subsoil:* Upper part—yellowish red clay loam; middle part—yellowish red sandy clay loam; lower part—strong brown sandy clay loam
*Substratum:* Pinkish gray, light gray, and strong brown sandy clay loam

**Lilbert**

*Surface layer:* Brown loamy fine sand
*Subsurface layer:* Upper part—yellowish brown loamy fine sand; lower part—light yellowish brown loamy fine sand
*Subsoil:* Upper part—yellowish brown sandy clay loam; lower part—yellowish brown, red, and light gray sandy clay loam

**Darco**

*Surface layer:* Brown loamy fine sand
*Subsurface layer:* Upper part—yellowish brown loamy fine sand; lower part—light yellowish brown fine sand
*Subsoil:* Upper part—red sandy clay loam; lower part—yellowish red sandy clay loam

### ***Properties and Qualities***

**Tenaha**

*Depth to restrictive feature:* 40 to 60 inches to densic material
*Drainage class:* Well drained
*Slowest permeability:* Moderately slow (About 0.20 in/hr)
*Shrink-swell potential:* Low (About 1.5 LEP)
*Flooding hazard:* None

**Lilbert**

*Depth to restrictive feature:* None
*Drainage class:* Well drained
*Slowest permeability:* Moderately slow (About 0.20 in/hr)
*Shrink-swell potential:* Low (About 1.5 LEP)
*Flooding hazard:* None

**Darco**

*Depth to restrictive feature:* None
*Drainage class:* Somewhat excessively drained
*Slowest permeability:* Moderate (About 0.6 in/hr)
*Shrink-swell potential:* Low (About 1.5 (LEP)
*Flooding hazard:* None

### ***Land Use***

**Cropland**

*Suitability:* Tenaha soils—not suited; Lilbert soils—suited; Darco soils—2 to 5 percent slopes—suited; 8 to 15 percent slopes—not suited
*Management concerns:* Tenaha soils—wind and water erosion, steep slope; Lilbert soils—wind and water erosion, permeability, sandy surface; Darco soils—wind and water erosion, excess water, permeability

**Pastureland**

*Suitability:* Tenaha soils—poorly suited; Lilbert soils—well suited; Darco soils—poorly suited
*Management concerns:* Tenaha soils—wind and water erosion, low available water capacity; Lilbert soils—wind and water erosion; Darco soils—wind and water erosion, low available water capacity

**Woodland**

*Suitability:* Tenaha soils—poorly suited; Lilbert soils—well suited; Darco soils—poorly suited
*Management concerns:* Tenaha soils—steep slopes, low strength, sandy surface texture; Lilbert soils—erosion, low strength, sandy surface; Darco soils—steep slopes, low strength, sandy surface

**Urban land**

*Suitability:* Tenaha soils—poorly suited; Lilbert soils—well suited; Darco soils—poorly suited
*Management concerns:* Tenaha soils—steep slopes, sandy textures, permeability, low strength; Lilbert soils—sandy surfaces, permeability; Darco soils—steep slopes, high sand content, permeability

## 3. Mantachie

### *Map Unit Composition*

*Percent of the survey area:* 8 percent
Mantachie soils—37 percent
Minor soils—63 percent (Cuthbert, Bowie, Eastwood, Gallime, Hainesville, Iulus, and Tenaha soils)

### *Setting*

*Landscape:* Coastal plain
*Landform:* Flood plain
*Geologic formation:* Holocene alluvium
*Slope:* 0 to 1 percent

### *Typical Profile*

**Mantachie**

*Surface layer:* Dark grayish brown loam
*Subsoil:* Upper part—grayish brown, dark yellowish brown, and reddish brown loam; middle part—light brownish gray loam; lower part—dark gray clay loam and gray clay loam

### *Properties and Qualities*

**Mantachie**

*Depth to restrictive feature:* None
*Drainage class:* Somewhat poorly drained
*Slowest permeability:* Moderate (About 0.60 in/hr)
*Shrink-swell potential:* Low (About 1.5 LEP)
*Flooding hazard:* Frequent

### *Land Use*

**Cropland**

*Suitability:* Not suited
*Management concerns:* Frequent flooding, wetness

**Pastureland**

*Suitability:* Suited
*Management concerns:* Frequent flooding, wetness, excess water

**Woodland**

*Suitability:* poorly suited
*Management concerns:* seasonal high water table, low strength, flooding, wetness

**Urban land**

*Suitability:* Not suited
*Management concerns:* Frequent flooding, seasonal high water table, wetness

## 4. Gallime-Latch-Mollville

***Map Unit Composition***

*Percent of the survey area:* 6 percent
Gallime soils—26 percent
Latch soils—22 percent
Mollville soils—12 percent
Minor soils—40 percent (Mooreville, Mantachie, Bowie, Darco, Cuthbert, and Sailes soils, and water)

***Setting***

*Landscape:* Coastal plain
*Landform:* Gallime soils—mound on stream terrace; Latch soils—pimple mound on stream terrace; Mollville soils—open depression on stream terrace
*Geologic formation:* Alluvium
*Slope:* Gallime soils—0 to 2 percent; Latch soils—0 to 1 percent; Mollville soils—0 to 1 percent

***Typical Profile***

**Gallime**

*Surface layer*: Brown fine sandy loam
*Subsurface layer*: Yellowish brown fine sandy loam
*Subsoil:* Upper part—strong brown loam with redoximorphic features in shades of brown; middle part—strong brown and yellowish brown sandy clay loam; lower part—pale brown fine sandy loam

**Latch**

*Surface layer:* Brown loamy fine sand
*Subsurface layer:* Upper part—yellowish brown loamy fine sand; lower part—light yellowish brown and yellowish brown loamy fine sand
*Subsoil:* Upper part—yellowish brown sandy clay loam; lower part—light brownish gray sandy clay loam and loamy fine sand

**Mollville**

*Surface layer:* Dark grayish brown loam
*Subsurface layer:* Light brownish gray loam
*Subsoil:* Upper part—grayish brown clay loam; lower part—grayish brown sandy clay loam and light gray fine sandy loam
Substratum: Grayish brown, light brownish gray, strong brown, and red fine sandy loam

***Properties and Qualities***

**Gallime**

*Depth to restrictive feature:* None

*Drainage class:* Well drained
*Slowest permeability:* Moderate (About 0.6 in/hr)
*Shrink-swell potential:* Low (About 1.5 LEP)
*Flooding hazard:* None

**Latch**

*Depth to restrictive feature:* None
*Drainage class:* Poorly drained
*Slowest permeability:* Moderate (About 0.6 in/hr)
*Shrink-swell potential:* Low (About 1.5 LEP)
*Flooding hazard:* None

**Mollville**

*Depth to restrictive feature:* None
*Drainage class:* Poorly drained
*Slowest permeability:* Slow (About 0.06 in/hr)
*Shrink-swell potential:* Moderate (About 4.5 LEP)
*Flooding hazard:* None

### *Land Use*

**Cropland**

*Suitability:* Gallime soils—suited; Latch soils—well suited; Mollville soils—poorly suited
*Management concerns:* Gallime soils—wind and water erosion, permeability; Latch soils—wind and water erosion; Mollville soils—wetness, permeability, excess water, surface and subsurface drainage

**Pastureland**

*Suitability:* Gallime soils—suited; Latch soils—poorly suited; Mollville soils—well suited
*Management concerns:* Gallime soils—erosion hazard; Latch soils—wind and water erosion, low available water capacity; Mollville soils—none

**Woodland**

*Suitability:* Gallime soils—well suited; Latch soils—suited; Mollville soils—poorly suited
*Management concerns:* Gallime soils—low strength; Latch soils—wind and water erosion, low strength, sandy surfaces; Mollville soils—ponding and standing water, wetness, low strength

**Urban land**

*Suitability:* Gallime soils—poorly suited; Latch soils—suited; Mollville soils—not suited
*Management concerns:* Gallime soils—moderate shrink-swell potential, seasonal high water table, wetness, low strength; Latch soils—seasonal high water table, high sand content, permeability; Mollville soils—ponding, wetness

## 5. Eastwood-Latex-Metcalf

### *Map Unit Composition*

*Percent of the survey area:* 5 percent
Eastwood soils—26 percent
Latex soils—25 percent
Metcalf soils—20 percent
Minor soils—29 percent (Cuthbert, Iulus, Kirvin, Lilbert, and Mantachie soils, and water)

### *Setting*

*Landscape:* Coastal plain
*Landform:* Eastwood and Latex soils—interfluve; Metcalf soils—stream terrace
*Geologic formation:* Wilcox Group
*Slope:* Eastwood soils—5 to 15 percent; Latex soils—1 to 3 percent; Metcalf soils—0 to 2 percent

### *Typical Profile*

**Eastwood**

*Surface layer:* Dark grayish brown very fine sandy loam
*Subsoil:* Upper part—red and yellowish red clay; middle part—pale red, yellowish red, strong brown, and gray clay; lower part—gray clay loam
*Substratum:* Stratified silty clay loam

**Latex**

*Surface layer:* Brown fine sandy loam
*Subsurface layer:* Brown fine sandy loam
*Subsoil:* Upper part—strong brown, yellowish brown, and red sandy clay loam; middle part—strong brown, dark red, and light brownish gray clay; lower part—red, light gray, yellowish brown, light brownish gray, and brownish yellow clay, and light brownish gray, yellowish red, and brownish yellow clay loam

**Metcalf**

*Surface layer:* Brown silt loam
*Subsurface layer:* Light yellowish brown silt loam
*Subsoil:* Upper part—yellowish brown clay loam; middle part—red and gray clay; lower part—yellowish brown, red, and gray clay

### *Properties and Qualities*

**Eastwood**

*Depth to restrictive feature:* None within 60 inches
*Drainage class:* Moderately well drained
*Slowest permeability:* Very slow (less than 0.06 in/hr)
*Shrink-swell potential:* High (About 7.5 LEP)
*Flooding hazard:* None

**Latex**

*Depth to restrictive feature:* None
*Drainage class:* Moderately well drained
*Slowest permeability:* Slow (About 0.06 in/hr)
*Shrink-swell potential:* High (About 7.5 LEP)
*Flooding hazard:* None

**Metcalf**

*Depth to restrictive feature:* None
*Drainage class:* Somewhat poorly drained
*Slowest permeability:* Very slow (less than 0.06 in/hr)
*Shrink-swell potential:* High (About 7.5 LEP)
*Flooding hazard:* None

### *Land Use*

**Cropland**

*Suitability:* Eastwood soils—1 to 5 percent slopes—poorly suited and 5 to 15 percent slopes—not suited; Latex soils—suited; Metcalf soils—suited
*Management concerns:* Eastwood soils—erosion hazard, rooting depth; Latex soils—wind and water erosion, rooting depth; Metcalf soils—rooting depth, high clay content

**Pastureland**

*Suitability:* Eastwood soils—suited; Latex soils—well suited; Metcalf soils—well suited
*Management concerns:* Eastwood soils—erosion hazard; Latex soils—none; Metcalf soils—excess water

**Woodland**

*Suitability:* Eastwood soils—1 to 5 percent slopes—suited and 5 to 15 percent slopes—poorly suited; Latex soils—well suited; Metcalf soils—suited
*Management concerns:* Eastwood soils—low strength, stickiness, steep slopes; Latex soils—low strength; Metcalf soils—low strength

**Urban land**

*Suitability:* Eastwood soils—poorly suited; Latex soils—poorly suited; Metcalf soils—poorly suited
*Management concerns:* Eastwood soils—high clay content, high shrink-swell potential, low strength, slow permeability, steep slopes, seepage; Latex soils—high shrink-swell potential, seasonal high water table, high clay content, slow permeability, low strength; Metcalf soils—wetness, seasonal high water table, high shrink-swell potential, high clay content, slow permeability, low strength

## 6. Metcalf

### *Map Unit Composition*

*Percent of the survey area:* 4 percent
Metcalf soils—41 percent
Minor soils—59 percent (Bowie, Briley, Cuthbert, Cypress, Eastwood, Iulus, Kirvin, Latch, Latex, and Mantachie soils, and water)

### *Setting*

*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geologic formation:* Wilcox Group
*Slope:* 0 to 2 percent

### *Typical Profile*

**Metcalf**

*Surface layer:* Brown silt loam
*Subsurface layer:* Light yellowish brown silt loam
*Subsoil:* Upper part—yellowish brown clay loam; middle part—red and gray clay; lower part—yellowish brown, red, and gray clay

### *Properties and Qualities*

**Metcalf**

*Depth to restrictive feature:* None
*Drainage class:* Somewhat poorly drained
*Slowest permeability:* Very slow (less than 0.06 in/hr)
*Shrink-swell potential:* High (About 7.5 LEP)
*Flooding hazard:* None

### *Land Use*

**Cropland**

*Suitability:* Suited
*Management concerns:* Rooting depth, high clay content

**Pastureland**

*Suitability:* Well suited
*Management concerns:* Excess water, compaction

**Woodland**

*Suitability:* Poorly suited
*Management concerns:* Low strength

**Urban land**

*Suitability:* Poorly suited
*Management concerns:* Seasonal high water table, high shrink-swell potential, slow permeability, low strength

## 7. Gladewater

### *Map Unit Composition*

*Percent of the survey area:* 2 percent
Gladewater—63 percent
Minor soils—37 percent (Darco, Eastwood, Iulus, Kirvin, Latex, and Metcalf soils, and water)

### *Setting*

*Landscape:* Coastal plain
*Landform:* Flood plain
*Geologic formation:* Alluvium
*Slope:* 0 to 1 percent

### *Typical Profile*

**Gladewater**

*Surface layer:* Black clay
*Subsoil:* Upper part—gray and dark gray clay; middle part—light brownish gray and gray clay; lower part—grayish brown clay

### *Properties and Qualities*

**Gladewater**

*Depth to restrictive feature:* None
*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Very slow (less than 0.06 in/hr)
*Shrink-swell potential:* Very high (About 17.0 LEP)
*Flooding hazard:* Frequent

***Land Use***

**Cropland**

*Suitability:* Not suited
*Management concerns:* Frequent flooding

**Pastureland**

*Suitability:* Poorly suited
*Management concerns:* Frequent flooding, wet conditions, compaction

**Woodland**

*Suitability:* Poorly suited
*Management concerns: L*ow strength, frequent flooding, stickiness

**Urban land**

*Suitability:* Not suited
*Management concerns:* Frequent flooding, high clay content, high shrink-swell potential, low strength

## 8. Water

***Map Unit Composition***

*Percent of the survey area:* 4 percent
Water—100 percent.

These areas include large reservoirs used for recreation and water supply.

# Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and provides the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Kirvin gravelly fine sandy loam, 2 to 5 percent slopes is a phase of the Kirvin series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A complex consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Gallime-Guyton complex, 0 to 2 percent slopes is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Cuthbert and Redsprings soils, 5 to 15 percent slopes is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Water is an example.

Table 4 provides the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

## Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one or several major kinds of soils. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. Similarly to other natural objects, soils have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called similar inclusions. They are mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are called contrasting inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern is so complex that it is impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

## AaB—Alazan fine sandy loam, 0 to 2 percent slopes

***Map Unit Composition***

**Major components:**
Alazan and similar soils: 85 percent

**Contrasting inclusions:**
Mollville soils: 15 percent. Mollville and similar soils occur as wet flats or enclosed depressions.

***Component Descriptions***

**Alazan**
*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 8.9 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 30 inches, apparent; from January to April
*Runoff class*: Low
*Non-irrigated land capability*: 2w

***Typical Profile***

*Surface layer:*
0 to 3 inches—strongly acid, brown fine sandy loam

*Subsurface layer:*
3 to 12 inches—very strongly acid, yellowish brown fine sandy loam

*Subsoil:*
12 to 20 inches—very strongly acid, brownish yellow loam, with redoximorphic features in shades of brown
20 to 26 inches—very strongly acid, yellowish brown clay loam, with redoximorphic features in shades of red and clay depletions in shades of gray
26 to 36 inches—very strongly acid, yellowish brown clay loam, with redoximorphic features in shades of red, and clay depletions in shades of gray
36 to 47 inches—very strongly acid, brownish yellow clay loam, with redoximorphic features in shades of red, brown, and gray
47 to 52 inches—very strongly acid, yellowish brown clay loam, with redoximorphic features in shades of red, brown, and gray
52 to 60 inches—very strongly acid, yellowish brown clay loam, with redoximorphic features in shades of brown and gray
60 to 75 inches—very strongly acid, yellowish brown clay loam, with redoximorphic features in shades of red, brown, and gray
75 to 80 inches—very strongly acid, light brownish gray clay loam, with redoximorphic features in shades of red, brown, and gray

### *Use and Management Considerations*

**Cropland**

- All areas are prime farmland.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

**Pastureland**

- This soil is well suited to pasture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.

**Building Sites**

- This soil is poorly suited to building site development, and structures may need special designs to avoid damage from wetness.
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance.

**Septic Tank Absorption Fields**

- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## AsA—Ashford clay, 0 to 1 percent slopes, ponded

### *Map Unit Composition*

**Major components:**
Ashford and similar soils: 90 percent

**Contrasting inclusions:**
Latex soils: 5 percent. Latex soils have loamy surfaces, and occur in depressional areas.
Metcalf soils: 5 percent. Metcalf soils have loamy surfaces, and occur on convex areas.

### *Component Descriptions*

**Ashford**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Clayey alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None

*Drainage class*: Poorly drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: Moderate (About 6.7 inches)
*Shrink-swell potential*: Very high (About 17.0 LEP)
*Flooding hazard*: None
*Ponding hazard*: Frequent for long duration
*Depth to seasonal water saturation*: About 0 to 12 inches, perched; from January to April, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 4w

### *Typical Profile*

*Surface layer:*
0 to 3 inches—extremely acid, gray clay, with redoximorphic features in shades of yellow and red

*Subsoil:*
3 to 17 inches—extremely acid, 60 percent gray, 35 percent yellowish brown, and 5 percent yellowish red clay
17 to 26 inches—extremely acid, gray clay, with redoximorphic features in shades of red and brown
26 to 36 inches—extremely acid, gray clay, with redoximorphic features in shades of red and yellow
36 to 58 inches—extremely acid, gray clay, with redoximorphic features in shades of red and yellow
58 to 75 inches—extremely acid, grayish brown clay, with redoximorphic features in shades of red and brown
75 to 80 inches—extremely acid, greenish gray clay, with redoximorphic features in shades of brown

### *Use and Management Considerations*

**Cropland**
- Controlling traffic can minimize soil compaction.
- The very high clay content restricts the rooting depth of crops, and restricts the movement of water into subsurface drains.
- A combination of surface and subsurface drainage helps to remove excess water.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

**Pastureland**
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- Restricting grazing during wet periods can minimize compaction.

**Woodland**
- A seasonal high water table and standing water can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.

- The high clay content causes this soil to become sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.

**Building Sites**

- Water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- This soil is not suited to this use because of ponding of water.

**Local Roads and Streets**

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- The high shrink-swell potential of the soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## BaB—Bernaldo fine sandy loam, 1 to 3 percent slopes

***Map Unit Composition***

**Major components:**
Bernaldo and similar soils: 80 percent

**Contrasting inclusions:**
Mollville soils: 10 percent. Mollville and similar soils are dominantly gray, and occur as closed depressional areas.
Hainesville soils: 10 percent. Hainesville and similar soils are sandy, and occur on similar positions.

***Component Descriptions***

**Bernaldo**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread or riser
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 1 to 3 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: High (About 9.2 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 48 to 72 inches, perched; from January to May, and December

*Runoff class*: Low
*Non-irrigated land capability*: 2e

***Typical Profile***

*Surface layer:*
0 to 4 inches—slightly acid, brown fine sandy loam

*Subsurface layer:*
4 to 9 inches—moderately acid, brown fine sandy loam

*Subsoil:*
9 to 18 inches—strongly acid, strong brown loam
18 to 31 inches—very strongly acid, strong brown sandy clay loam, with redoximorphic features in shades of red
31 to 44 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of red
44 to 61 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of red
61 to 80 inches—very strongly acid, yellowish brown loam

***Use and Management Considerations***

**Cropland**
- All areas are prime farmland.
- These soils are well suited to cropland.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.

**Pastureland**
- These soils are well suited to pasture.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.

**Building Sites**
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

**Septic Tank Absorption Fields**
- The seasonal high water table limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## BaD—Bernaldo fine sandy loam, 3 to 8 percent slopes

***Map Unit Composition***

**Major components:**
Bernaldo and similar soils: 90 percent

**Contrasting inclusions:**
Mollville soils: 10 percent. Mollville and similar soils are gray throughout, and occur in depressional areas.

### *Component Descriptions*

**Bernaldo**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread or riser
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 3 to 8 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: High (About 9.2 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 48 to 72 inches, perched; from January to May, and December
*Runoff class*: Medium
*Non-irrigated land capability*: 4e

### *Typical Profile*

*Surface layer:*
0 to 4 inches—moderately acid, brown fine sandy loam

*Subsurface layer:*
4 to 13 inches—strongly acid, yellowish brown fine sandy loam
13 to 18 inches—strongly acid, light yellowish brown fine sandy loam

*Subsoil:*
18 to 25 inches—strongly acid, yellowish brown sandy clay loam
25 to 36 inches—very strongly acid, yellowish brown sandy clay loam
36 to 46 inches—very strongly acid, brownish yellow sandy clay loam, with redoximorphic features in shades of brown
46 to 80 inches—very strongly acid, brownish yellow loam, with redoximorphic features in shades of brown

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.

**Pastureland**

- Erosion control is needed when pastures are renovated.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, and increases the cost of constructing haul roads and log landings.
- The slope may restrict the use of some mechanical planting equipment.

**Building Sites**

- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

**Septic Tank Absorption Fields**

- The steep slope requires special design and installation techniques for the effluent distribution lines. Seepage of poorly treated effluent is a concern.
- The seasonal high water table limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## Bg—Bibb fine sandy loam, frequently flooded

***Map Unit Composition***

**Major components:**
Bibb and similar soils: 80 percent

**Contrasting inclusions:**
Iulus soils: 20 percent. Iulus and similar soils are brown, and occur on natural levees.

***Component Descriptions***

**Bibb**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plains
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 9.0 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Frequent for long duration
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 6 to 12 inches, apparent; from January to April, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

### *Typical Profile*

*Surface layer:*
0 to 4 inches—very strongly acid, brown fine sandy loam, with redoximorphic features in shades of brown

*Subsurface layer:*
4 to 12 inches—strongly acid, dark grayish brown fine sandy loam, with redoximorphic features in shades of brown

*Substratum:*
12 to 18 inches—strongly acid, gray loam, with redoximorphic features in shades of brown
18 to 28 inches—strongly acid, gray silt loam, with redoximorphic features in shades of brown
28 to 40 inches—strongly acid, gray sandy loam, with redoximorphic features in shades of brown
40 to 52 inches—strongly acid, light brownish gray fine sandy loam
52 to 63 inches—strongly acid, light brownish gray fine sandy loam, with redoximorphic features in shades of brown
63 to 80 inches—strongly acid, light gray sand

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

**Woodland**
- A seasonal high water table and standing water can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Flooding may result in damage to haul roads and increased maintenance costs.
- Soil wetness and flooding restrict the safe use of roads by log trucks.

**Building Sites**
- This soil is not suited to this use. The frequent flooding greatly increases the risk of damage associated with floodwaters.

**Septic Tank Absorption Fields**
- This soil is not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## BoC—Bowie fine sandy loam, 2 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Bowie and similar soils: 80 percent

**Contrasting inclusions:**
Eastwood soils: 10 percent. Eastwood and similar soils have clayey subsoils, and occur in similar positions, as heads of drains.
Tenaha soils: 10 percent. Tenaha and similar soils have sandy surface layers 20 to 40 inches thick, and occur in similar positions.

### *Component Descriptions*

**Bowie**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 2 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 7.8 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 42 to 60 inches, perched; from January to April
*Runoff class*: Medium
*Non-irrigated land capability*: 3e

### *Typical Profile*

*Surface layer:*
0 to 6 inches—very strongly acid, dark grayish brown fine sandy loam

*Subsurface layer:*
6 to 10 inches—very strongly acid, light yellowish brown fine sandy loam

*Subsoil:*
10 to 19 inches—strongly acid, yellowish brown sandy clay loam
19 to 27 inches—strongly acid, yellowish brown sandy clay loam
27 to 41 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of red
41 to 57 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of red and gray
57 to 73 inches—very strongly acid, strong brown sandy clay loam, with redoximorphic features in shades of red and gray
73 to 80 inches—very strongly acid, in shades of light brownish gray, red, and brown clay loam

### *Use and Management Considerations*

**Cropland**

- All areas are prime farmland.
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland** (fig. 4)

- Erosion control is needed when pastures are renovated.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

**Building Sites**

- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

**Figure 4.—Hay meadow on Bowie fine sandy loam, 2 to 5 percent slopes. Bowie soils are in Pasture Management Group 4.**

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## BrB—Briley loamy fine sand, 2 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Briley and similar soils: 85 percent

**Contrasting inclusions:**
Kirvin soils: 15 percent. Kirvin and similar soils have loamy surface layers, clayey subsoils, and are deep soils that occur as knobs and ridges.

### *Component Descriptions*

**Briley**

*MLRA*: 133B—Western Coastal Plain
*Landscape*: Coastal plain
*Landform:* Interfluve or ridge
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 2 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 6.5 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very low
*Non-irrigated land capability*: 3e

### *Typical Profile*

*Surface layer:*
0 to 10 inches—moderately acid, dark grayish brown loamy fine sand

*Subsurface layer:*
10 to 22 inches—slightly acid, yellowish brown loamy fine sand

*Subsoil:*
22 to 39 inches—strongly acid, yellowish red sandy clay loam
39 to 54 inches—very strongly acid, yellowish red sandy clay loam
54 to 80 inches—very strongly acid, red sandy clay loam

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Plant nutrients are leached at an accelerated rate because of the sandy layer.

**Pastureland**

- Erosion control is needed when pastures are renovated.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- A loss of soil productivity may occur following an episode of uncontrolled fire.

**Building Sites**

- This soil is well suited to use as building sites.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

**Local Roads and Streets**

- These soils are well suited for local roads and streets.

## CrF—Cuthbert and Redsprings soils, 5 to 15 percent slopes

### *Map Unit Composition*

**Major components:**
Cuthbert and similar soils: 50 percent
Redsprings and similar soils: 35 percent

**Contrasting inclusions:**
Tenaha soils: 15 percent. These soils have sandy surface layers 20 to 40 inches thick, and occur in similar positions to Cuthbert soils.

### *Component Descriptions*

**Cuthbert**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Position on hillslope*: Side slope
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 5 to 15 percent

*Surface fragments*: None
*Depth to restrictive feature*: 20 to 40 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 6.9 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 6e

***Typical Profile***

*Surface layer:*
0 to 6 inches—strongly acid, brown fine sandy loam

*Subsurface layer:*
6 to 13 inches—strongly acid, brown fine sandy loam

*Subsoil:*
13 to 27 inches—very strongly acid, red clay
27 to 31 inches—very strongly acid, dark red clay loam
31 to 37 inches—very strongly acid, dark red and strong brown and light brownish gray stratified sandy clay loam

*Substratum:*
37 to 80 inches—very strongly acid, gray and grayish brown and dark yellowish brown stratified sandy clay loam

**Redsprings**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from glauconitic sandstone
*Slope*: 5 to 15 percent
*Surface fragments*: None
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 7.3 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 6e

***Typical Profile***

*Surface layer:*
0 to 3 inches—slightly acid, dark reddish brown gravelly fine sandy loam

*Subsurface layer:*
3 to 9 inches—moderately acid, reddish brown gravelly fine sandy loam

*Subsoil:*
9 to 53 inches—strongly acid, red clay

*Substratum:*
53 to 80 inches—very strongly acid, red and strong brown clay loam

***Use and Management Considerations***

**Cropland**
- These soils are not suited to cropland.
- The rooting depth of crops is restricted by dense soil material and high clay content.

**Pastureland**
- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- The rooting depth of plants may be restricted by a dense soil layer.

**Woodland**
- If the soil is disturbed, the steeper slopes increase the hazard of erosion.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The steeper slopes create unsafe operating conditions, reduce the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- Rock fragments and stones obstruct the use of mechanical planting equipment, and the use of equipment during site preparation for planting or seeding.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Building Sites**
- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- The restricted permeability of these soils limit the absorption and proper treatment of the effluent from septic systems.
- The steeper slopes require special design and installation techniques for the effluent distribution lines. Seepage of poorly treated effluent is a concern.

**Local Roads and Streets**
- The high shrink-swell potential of the soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of these soils is not suitable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- The steeper slopes require special designs for local roads and streets.

## CrG—Cuthbert and Redsprings soils, 15 to 40 percent slopes, stony

### *Map Unit Composition*

**Major components:**
Cuthbert and similar soils: 60 percent
Redsprings and similar soils: 25 percent

**Contrasting inclusions:**
Tenaha soils: 15 percent. These soils have sandy surface layers 20 to 40 inches thick, and occur in similar positions to Cuthbert soils.

### *Component Descriptions*

**Cuthbert**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Position on hillslope*: Side slope
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 15 to 40 percent
*Surface fragments*: Less than 1 percent subangular stones
*Depth to restrictive feature*: 20 to 40 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 6.5 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 7e

### *Typical Profile*

*Surface layer:*
0 to 7 inches—moderately acid, dark yellowish brown gravelly fine sandy loam

*Subsurface layer:*
7 to 13 inches—strongly acid, yellowish brown gravelly fine sandy loam

*Subsoil:*
13 to 21 inches—very strongly acid, red clay
21 to 35 inches—very strongly acid, red sandy clay loam

*Substratum:*
35 to 40 inches—very strongly acid, reddish yellow and red stratified fine sandy loam
40 to 80 inches—extremely acid, red and pink stratified fine sandy loam

**Redsprings**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from glauconitic sandstone

*Slope*: 15 to 40 percent
*Surface fragments*: Less than 1 percent subangular stones
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 7.2 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 7e

### *Typical Profile*

*Surface layer:*
0 to 6 inches—moderately acid, dark reddish brown gravelly fine sandy loam

*Subsoil:*
6 to 15 inches—very strongly acid, dark red clay
15 to 33 inches—very strongly acid, red clay
33 to 41 inches—very strongly acid, yellowish red clay

*Substratum:*
41 to 45 inches—very strongly acid, strong brown and yellowish red clay loam
45 to 80 inches—very strongly acid, strong brown and yellowish red stratified sandy clay loam

### *Use and Management Considerations*

**Cropland**
- These soils are not suited to cropland.
- The rooting depth of crops is restricted by dense soil material and high clay content.

**Pastureland**
- These soils are not recommended for pasture.
- The rooting depth of plants may be restricted by a dense soil layer.

**Woodland**
- If the soil is disturbed, the steeper slopes increase the hazard of erosion.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The steeper slopes create unsafe operating conditions, reduce the operating efficiency of log trucks, and may restrict the use of some mechanical planting equipment.
- Rock fragments and stones obstruct the use of mechanical planting equipment, and the use of equipment during site preparation for planting or seeding.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

**Building Sites**
- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of these soils limit the absorption and proper treatment of the effluent from septic systems.
- The steeper slopes require special design and installation techniques for the effluent distribution lines. Seepage of poorly treated effluent is a concern.

**Local Roads and Streets**

- The high shrink-swell potential of the soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of these soils is not suitable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- The steeper slopes require special designs for local roads and streets.

## CtE—Cuthbert fine sandy loam, 5 to 15 percent slopes

***Map Unit Composition***

**Major components:**
Cuthbert and similar soils: 80 percent

**Contrasting inclusions:**
Tenaha soils: 15 percent. Tenaha and similar soils have sandy surface layers 20 to 40 inches thick, and occur in similar positions.
Darco soils: 5 percent. Darco and similar soils have sandy surface layers 40 to 60 inches thick, and occur on toeslopes.

***Component Descriptions***

**Cuthbert**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Position on hillslope*: Side slope
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 5 to 15 percent
*Depth to restrictive feature*: 20 to 40 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 6.9 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 6e

***Typical Profile***

*Surface layer:*
0 to 9 inches—strongly acid, brown fine sandy loam

*Subsoil:*
9 to 24 inches—strongly acid, red clay
24 to 31 inches—strongly acid, red clay loam

*Substratum:*
31 to 66 inches—very strongly acid, red, yellowish red, and gray clay loam
66 to 80 inches—extremely acid, gray, yellowish red, brownish yellow, and dark yellowish brown sandy clay loam

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.
- The rooting depth of crops is restricted by dense soil material and high clay content.

**Pastureland**
- This soil provides poor summer pasture.
- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.
- The rooting depth of plants may be restricted by a dense soil layer.

**Woodland**
- If the soil is disturbed, the steeper slopes increase the hazard of erosion.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.
- The steeper slopes create unsafe operating conditions, reduce the operating efficiency of log trucks, and restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Building Sites**
- The moderate shrink-swell potential may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The steeper slopes influence the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
- The high content of clay below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The steeper slopes require special design and installation techniques for the effluent distribution lines. Seepage of poorly treated effluent is a concern.

**Local Roads and Streets**

- The high shrink-swell potential of the soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of these soils is not suitable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- The steeper slopes requires special designs for local roads and streets.

## CuE—Cuthbert gravelly fine sandy loam, 5 to 15 percent slopes

***Map Unit Composition***

**Major components:**
Cuthbert and similar soils: 80 percent

**Contrasting inclusions:**
Darco soils: 5 percent. Darco and similar soils have sandy layers 40 to 60 inches thick, and occur on toeslopes.
Tenaha soils: 15 percent. Tenaha and similar soils have sandy surface layers 20 to 40 inches thick, and occur in similar positions to Cuthbert.

***Component Descriptions***

**Cuthbert**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Position on hillslope*: Side slope
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 5 to 15 percent
*Surface fragments*: Less than 1 percent ironstone gravels
*Depth to restrictive feature*: 20 to 40 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 6.8 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 6e

***Typical Profile***

*Surface layer:*
0 to 4 inches—strongly acid, very dark grayish brown gravelly fine sandy loam

*Subsurface layer:*
4 to 9 inches—strongly acid, brown gravelly fine sandy loam

*Subsoil:*
9 to 30 inches—very strongly acid, red clay
30 to 35 inches—very strongly acid, yellowish red and light brownish gray clay loam

*Substratum:*
35 to 80 inches—extremely acid, dark yellowish brown and brownish yellow and yellowish red stratified sandy clay loam

***Use and Management Considerations***

**Cropland**
- This soil is not suited to cropland.
- The rooting depth of crops is restricted by dense soil material and high clay content.

**Pastureland**
- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.
- The rooting depth of plants may be restricted by a dense soil layer.

**Woodland**
- If the soil is disturbed, the steeper slopes increase the hazard of erosion.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The steeper slopes create unsafe operating conditions, and reduce the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Rock fragments and stones obstruct the use of mechanical planting equipment and restrict the use of equipment during site preparation for planting or seeding.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Building Sites**
- The moderate shrink-swell potential may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The steeper slopes influence the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
- The high content of clay below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The steeper slopes require special design and installation techniques for the effluent distribution lines. Seepage of poorly treated effluent is a concern.

**Local Roads and Streets**
- The high shrink-swell potential of the soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of these soils is not suited for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- The steeper slopes require special designs for local roads and streets.

## Cy—Cypress clay loam, submerged

### *Map Unit Composition*

**Major components:**
Cypress and similar soils: 90 percent

**Contrasting inclusions:**
Iulus soils: 10 percent. Iulus and similar soils are brown, and occur on natural levees.

### *Component Descriptions*

**Cypress**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plains or oxbows (fig. 5)
*Parent material*: Clayey alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Very poorly drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: High (About 9.6 inches)
*Shrink-swell potential of the soil*: Moderate (About 4.5 LEP)
*Flooding hazard*: Frequent for long duration
*Ponding hazard*: Frequent for very long duration

**Figure 5.—An area of Cypress clay loam, submerged. The Cypress soils are in the Not Suited category for Woodland Management Groups. The very long duration ponding hinders harvesting and management.**

*Depth to seasonal water saturation*: At the surface, apparent; from January to December
*Runoff class*: Negligible
*Non-irrigated land capability*: 8w

### *Typical Profile*

0 to 3 inches—moderately decomposed plant material

Surface layer:
3 to 6 inches—very strongly acid, very dark grayish brown clay loam, with redoximorphic features in shades of brown

*Substratum:*
6 to 15 inches—extremely acid, gray clay
15 to 26 inches—extremely acid, gray clay loam, with redoximorphic features in shades of brown and gray
26 to 40 inches—very strongly acid, gray clay loam, with redoximorphic features in shades of brown
40 to 80 inches—very strongly acid, gray silty clay

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- This soil is not suited to pasture.

**Woodland**
- A seasonal high water table, standing water, ponding, and flooding can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Flooding and soil wetness may result in damage to haul roads and increased maintenance costs.
- The high content of clay causes the soil to become sticky when wet. The stickiness increases the cost of constructing haul roads and log landings.
- Flooding and ponding restrict the safe use of roads by log trucks.
- The low soil strength makes harvesting equipment difficult to operate and damage may result, and may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment, and restricts site preparation to drier periods.

**Building Sites**
- The severe flooding hazard is not suited to building site development.
- The frequent flooding and ponding greatly increases the risk of damage associated with floodwaters.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- This soil is not suited to septic tank absorption fields. The flooding and ponding greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**
- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

- The shrink-swell potential of the soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## DaB—Darco loamy fine sand, 2 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Darco and similar soils: 80 percent

**Contrasting inclusions:**
Kirvin soils: 20 percent. Kirvin soils have loamy subsoils, are deep to parent material, and occur on similar positions.

### *Component Descriptions*

**Darco**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 2 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat excessively drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Low (About 4.8 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Negligible
*Non-irrigated land capability*: 3s

### *Typical Profile*

*Surface layer:*
0 to 4 inches—strongly acid, brown loamy fine sand

*Subsurface layer:*
4 to 10 inches—strongly acid, yellowish brown loamy fine sand
10 to 62 inches—strongly acid, light yellowish brown fine sand

*Subsoil:*
62 to 74 inches—very strongly acid, red sandy clay loam
74 to 80 inches—very strongly acid, yellowish red sandy clay loam

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**
- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings.
- The sandy nature of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.
- A loss of soil productivity may occur following an episode of uncontrolled fire.

**Building Sites**
- These soils are well suited to use as building sites.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**
- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

**Local Roads and Streets**
- These soils are well suited to use as a site for local roads and streets.

## DaE—Darco loamy fine sand, 8 to 15 percent slopes

### *Map Unit Composition*

**Major components:**
Darco and similar soils: 80 percent

**Contrasting inclusions:**
Cuthbert soils: 20 percent. Cuthbert soils are deep to parent material, and have clayey subsoils.

### *Component Descriptions*

**Darco**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 8 to 15 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat excessively drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Low (About 4.8 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very low
*Non-irrigated land capability*: 6e

### *Typical Profile*

*Surface layer:*
0 to 9 inches—moderately acid, dark brown loamy fine sand

*Subsurface layer:*
9 to 30 inches—moderately acid, yellowish brown loamy fine sand
30 to 59 inches—strongly acid, light yellowish brown loamy fine sand

*Subsoil:*
59 to 80 inches—very strongly acid, yellowish red sandy clay loam

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- This soil provides poor summer pasture.
- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**
- The steeper slopes increase the hazard of erosion if the soils are disturbed.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings, and may reduce the traction of wheeled harvest equipment and log trucks.

- The steep slope creates unsafe operating conditions, reduces the operating efficiency of log trucks, and restricts the use of some mechanical planting equipment.
- Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.
- A loss of soil productivity may occur following an episode of uncontrolled fire.

**Building Sites**

- The steep slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
- The steeper slopes require special design and installation techniques for the effluent distribution lines.

**Local Roads and Streets**

- The steeper slopes require special design for local roads and streets.

## DAM—Dam

This map unit consists of a barrier built across a waterway to control the flow or raise the level of water. It is not assigned any interpretive groups.

## DuA—Duffern fine sand, 1 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Duffern and similar soils: 80 percent

**Contrasting inclusions:**
Briley soils: 20 percent. These soils have loamy subsoils, and occur on ridges.

***Component Descriptions***

**Duffern**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Sandy marine deposits derived from sedimentary rock
*Slope*: 1 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Excessively drained
*Slowest permeability*: Rapid (About 6.0 in/hr)
*Available water capacity*: Low (About 3.8 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet

*Runoff class*: Negligible
*Non-irrigated land capability*: 4s

### ***Typical Profile***

*Surface layer:*
0 to 4 inches—very strongly acid, brown fine sand

*Subsurface layer:*
4 to 10 inches—very strongly acid, dark yellowish brown fine sand
10 to 26 inches—strongly acid, dark yellowish brown fine sand
26 to 43 inches—very strongly acid, dark yellowish brown fine sand

*Subsoil:*
43 to 56 inches—strongly acid, yellowish brown fine sand
56 to 69 inches—strongly acid, brownish yellow fine sand
69 to 80 inches—very strongly acid, brownish yellow fine sand

### ***Use and Management Considerations***

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Plant nutrients are leached at an accelerated rate because of the sandy layer.

**Pastureland**

- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings, and reduce the traction of wheeled harvest equipment and log trucks.
- Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Uncontrolled burning may destroy organic matter.

**Building Sites**

- These soils are well suited to use as building sites.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

**Local Roads and Streets**

- These soils are well suited to use as a site for local roads and streets.

## EeB—Eastwood very fine sandy loam, 1 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Eastwood and similar soils: 90 percent

**Contrasting inclusions:**
Metcalf soils: 10 percent. These soils are loamy in the upper part, and occur in low wetter positions.

### *Component Descriptions*

**Eastwood**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from shale
*Slope*: 1 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None within 60 inches
*Drainage class*: Moderately well drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: High (About 9.2 inches)
*Shrink-swell potential*: High (About 7.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 4e

### *Typical Profile*

*Surface layer:*
0 to 4 inches—moderately acid, brown very fine sandy loam

*Subsurface layer:*
4 to 10 inches—strongly acid, brown very fine sandy loam

*Subsoil:*
10 to 49 inches—extremely acid, red clay
49 to 58 inches—extremely acid, light gray, red, and yellowish red clay loam

*Substratum:*
58 to 70 inches—extremely acid, light gray clay loam
70 to 80 inches—neutral, white clay loam

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- The rooting depth of crops may be restricted by the high clay content.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**

- Erosion control is needed when pastures are renovated.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment and restricts the use of equipment for site preparation to drier periods.

**Building Sites**

- The severe shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- The high shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## EeD—Eastwood very fine sandy loam, 5 to 15 percent slopes

### *Map Unit Composition*

**Major components:**
Eastwood and similar soils: 90 percent

**Contrasting inclusions:**
Metcalf soils: 10 percent. These soils are loamy in the upper part, and occur on toeslopes.

### *Component Descriptions*

**Eastwood**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain

*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from shale
*Slope*: 5 to 15 percent
*Surface fragments*: None
*Depth to restrictive feature*: None within 60 inches
*Drainage class*: Moderately well drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: High (About 9.1 inches)
*Shrink-swell potential*: High (About 7.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 6e

### *Typical Profile*

*Surface layer:*
0 to 5 inches—moderately acid, dark grayish brown very fine sandy loam

*Subsoil:*
5 to 16 inches—strongly acid, red clay
16 to 24 inches—very strongly acid, red clay
24 to 34 inches—very strongly acid, yellowish red clay
34 to 47 inches—very strongly acid, pale red, yellowish red, strong brown, and gray clay
47 to 57 inches—moderately acid, gray clay loam

*Substratum:*
57 to 80 inches—neutral, stratified silty clay loam

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- Avoiding overgrazing can reduce the hazard of erosion.
- Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.
- Erosion control is needed when pastures are renovated.

**Woodland**
- The steeper slopes increase the hazard of erosion if the soil is disturbed.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- This soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings, reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.
- The steeper slopes create unsafe operating conditions and reduces the operating efficiency of log trucks, and restricts the use of some mechanical planting equipment.

**Building Sites**
- The severe shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

- The steeper slopes influence the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The steeper slopes require special design and installation techniques for the effluent distribution lines. Seepage of poorly treated effluent is a concern.

**Local Roads and Streets**

- The high shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- The steeper slopes require special design for local roads and streets.

## ElA—Elrose fine sandy loam, 2 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Elrose and similar soils: 85 percent

**Contrasting inclusions:**
Redsprings soils: 15 percent. These soils have gravelly surface layers, and occur on slightly higher landscape positions.

***Component Descriptions***

**Elrose**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from glauconitic sandstone
*Slope*: 2 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 8.0 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Low
*Non-irrigated land capability*: 3e

***Typical Profile***

*Surface layer:*
0 to 3 inches—very strongly acid, dark grayish brown fine sandy loam

*Subsurface layer:*
3 to 13 inches—strongly acid, brown fine sandy loam

*Subsoil:*
13 to 38 inches—moderately acid, red loam
38 to 51 inches—moderately acid, red clay loam
51 to 72 inches—strongly acid, red sandy clay
72 to 80 inches—strongly acid, red sandy clay loam

### *Use and Management Considerations*

**Cropland**
- All areas are prime farmland.
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- The rooting depth of crops may be restricted by the high clay content.

**Pastureland**
- Erosion control is needed when pastures are renovated.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

**Building Sites**
- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**
- These soils are well suited to use as a site for septic tank absorption fields.

**Local Roads and Streets**
- These soils are well suited to use as a site for local roads and streets.

## EtA—Erno-Thage complex, 0 to 2 percent slopes

### *Map Unit Composition*

**Major components:**
Erno and similar soils: 50 percent
Thage and similar soils: 35 percent

**Contrasting inclusions:**
Metcalf soils: 15 percent. Metcalf soils have fine-silty control sections, and occur in open depressions.

### *Component Descriptions*

**Erno**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Pimple mound
*Parent material*: Loamy alluvium derived from sedimentary rock

*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: 20 to 40 inches to a fragipan
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 7.5 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 30 to 48 inches, perched; from January to April, and December
*Runoff class*: High
*Non-irrigated land capability*: 2e

#### ***Typical Profile***

*Surface layer:*
0 to 3 inches—neutral, brown very fine sandy loam

*Subsurface layer:*
3 to 10 inches—neutral, brown very fine sandy loam

Subsoil:
10 to 20 inches—strongly acid, yellowish brown clay loam
20 to 38 inches—strongly acid, brownish yellow loam
38 to 46 inches—moderately acid, light yellowish brown loam
46 to 73 inches—strongly acid, light yellowish brown very fine sandy loam
73 to 80 inches—strongly acid, light yellowish brown loam

### **Thage**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: 25 to 40 inches to fragipan
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 7.8 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 24 to 48 inches, perched; from January to April
*Runoff class*: Medium
*Non-irrigated land capability*: 2w

#### ***Typical Profile***

*Surface layer:*
0 to 2 inches—moderately acid, brown fine sandy loam

*Subsurface layer:*
2 to 8 inches—moderately acid, brown fine sandy loam

*Subsoil:*
8 to 17 inches—strongly acid, yellowish brown loam, with redoximorphic features in shades of brown or yellow
17 to 34 inches—strongly acid, yellowish brown clay loam, with redoximorphic features in shades of red masses and gray
34 to 43 inches—strongly acid, yellowish brown clay loam, with redoximorphic features in shades of brown and gray
43 to 49 inches—strongly acid, yellowish brown and grayish brown clay loam, with redoximorphic features in shades of red and gray
49 to 58 inches—strongly acid, grayish brown clay loam, with redoximorphic features in shades of brown
58 to 68 inches—strongly acid, grayish brown clay loam, with redoximorphic features in shades of brown
68 to 80 inches—strongly acid, grayish brown silty clay loam, with redoximorphic features in shades of red and yellow

### *Use and Management Considerations*

**Cropland**
- All areas are prime farmland.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**
- These soils provide poor summer pasture.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

**Building Sites**
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

**Septic Tank Absorption Fields**
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## EyB—Eylau very fine sandy loam, 0 to 2 percent slopes

### *Map Unit Composition*

**Major components:**
Eylau and similar soils: 80 percent

**Contrasting inclusions:**
Bowie soils: 20 percent. These soils are well drained, and occur on slightly higher positions.

### *Component Descriptions*

**Eylau**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 8.6 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Within 80 inches
*Runoff class*: Medium
*Non-irrigated land capability*: 2e

### *Typical Profile*

*Surface layer:*
0 to 6 inches—strongly acid, brown very fine sandy loam

*Subsurface layer:*
6 to 16 inches—strongly acid, brown loam

*Subsoil:*
16 to 38 inches—very strongly acid, brownish yellow clay loam
38 to 48 inches—strongly acid, brownish yellow clay loam
48 to 60 inches—very strongly acid, yellowish brown clay loam
60 to 70 inches—very strongly acid, strong brown clay loam
70 to 80 inches—very strongly acid, light brownish gray, pinkish gray, and yellowish red clay loam

### *Use and Management Considerations*

**Cropland**

- All areas are prime farmland.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**
- This soil is well suited to pasture.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.

**Building Sites**
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

**Septic Tank Absorption Fields**
- The restricted permeability limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## GaA—Gallime fine sandy loam, 1 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Gallime and similar soils: 75 percent

**Contrasting inclusions:**
Eastwood soils: 10 percent. These soils are clayey near the surface, and occur on drainageways
Hainesville soils: 10 percent. These soils are sandy throughout, and occur on slightly higher positions.
Mollville soils: 5 percent. These soils are gray throughout, and occur in depressional areas.

***Component Descriptions***

**Gallime**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 1 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 8.8 inches)

*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 48 to 72 inches, perched; from January to April, and December
*Runoff class*: Low
*Non-irrigated land capability*: 3e

### *Typical Profile*

*Surface layer:*
0 to 5 inches—strongly acid, brown fine sandy loam

*Subsurface layer:*
5 to 16 inches—strongly acid, light yellowish brown fine sandy loam
16 to 27 inches—moderately acid, light yellowish brown fine sandy loam

*Subsoil:*
27 to 38 inches—moderately acid, strong brown loam, with redoximorphic features in shades of gray and red
38 to 51 inches—moderately acid, strong brown sandy clay loam, with redoximorphic features in shades of gray and red
51 to 54 inches—very strongly acid, strong brown sandy clay loam, with redoximorphic features in shades of gray and red
54 to 78 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of gray and red
78 to 80 inches—very strongly acid, red sandy clay loam, with redoximorphic features in shades of brown or gray

### *Use and Management Considerations*

**Cropland**
- All areas are prime farmland.
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

**Pastureland**
- Erosion control is needed when pastures are renovated.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

**Building Sites**
- Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

**Septic Tank Absorption Fields**

- The seasonal high water table limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## GaC—Gallime-Guyton complex, 0 to 2 percent slopes

***Map Unit Composition***

**Major components:**
Gallime and similar soils: 48 percent
Guyton and similar soils: 42 percent

**Contrasting inclusions:**
Metcalf soils: 10 percent. These soils are somewhat poorly drained, and occur on intermound positions.

***Component Descriptions***

**Gallime**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Mound
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 8.7 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 48 to 72 inches, perched; from January to April, and December
*Runoff class*: Low
*Non-irrigated land capability*: 2e

***Typical Profile***

*Surface layer:*
0 to 9 inches—very strongly acid, brown fine sandy loam

*Subsurface layer:*
9 to 21 inches—very strongly acid, yellowish brown fine sandy loam

Subsoil:
21 to 43 inches—very strongly acid, strong brown loam
43 to 53 inches—very strongly acid, strong brown sandy clay loam
53 to 66 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of red

53 to 66 inches—very strongly acid, pale brown fine sandy loam
66 to 80 inches—very strongly acid, yellowish brown sandy clay loam, with redoximorphic features in shades of red

**Guyton**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: High (About 11.6 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: At the surface to a depth of 18 inches, perched; from January to May, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 3w

***Typical Profile***

*Surface layer:*
0 to 3 inches—very strongly acid, very dark grayish brown silt loam

*Subsoil:*
3 to 8 inches—very strongly acid, grayish brown silt loam
8 to 19 inches—strongly acid, grayish brown silt loam

Subsoil:
19 to 55 inches—moderately acid, grayish brown silty clay loam and light brownish gray silt loam
55 to 60 inches—slightly acid, grayish brown and light olive brown silt loam
60 to 80 inches—slightly acid, light olive brown and grayish brown sandy clay loam

***Use and Management Considerations***

**Cropland**

- Prime farmland if drained for the Guyton soils.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion on the Gallime soils.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

**Pastureland**

- These soils are well suited to pasture.

**Woodland**

- The low strength of the soils may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.

**Building Sites**

- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The seasonal high water table in the Guyton soils restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

**Septic Tank Absorption Fields**

- The seasonal high water table in areas of the Guyton soils limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## Gf—Gladewater clay, frequently flooded

### *Map Unit Composition*

**Major components:**
Gladewater: 90 percent

**Contrasting inclusions:**
Iulus soils: 10 percent. Iulus soils are loamy, and occur on natural levees along rivers and major creek channels.

### *Component Descriptions*

**Gladewater**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* River valley, flood plain
*Parent material*: Clayey alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: High (About 10.3 inches)
*Shrink-swell potential*: Very high (About 17.0 LEP)
*Flooding hazard*: Frequent for very long duration from January to May, and November to December
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 42 inches, perched; from January to May, and November to December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

### *Typical Profile*

*Surface layer:*
0 to 8 inches—strongly acid, black clay

*Subsurface layer:*
8 to 12 inches—strongly acid, gray and dark gray clay

*Subsoil:*
12 to 27 inches—very strongly acid, light brownish gray clay
27 to 42 inches—very strongly acid, gray clay
42 to 80 inches—very strongly acid, grayish brown clay

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- Restricting grazing during wet periods can minimize compaction.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Flooding may result in damage to haul roads and increased maintenance costs, and restricts the safe use of roads by log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.

**Building Sites**
- This soil is not suited to building site development because of frequent flooding.
- The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- This soil is not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**
- The high shrink-swell potential of this soil in not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## HaA—Hainesville fine sand, 0 to 2 percent slopes

***Map Unit Composition***

**Major components:**
Hainesville and similar soils: 90 percent

**Contrasting inclusions:**
Mantachie soils: 5 percent. Mantachie soils are dominantly gray loamy soils, and occur on flood plains.
Mollville soils: 5 percent. Mollville soils are gray loamy soils, and occur in depressional areas.

***Component Descriptions***

**Hainesville**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread
*Parent material*: Sandy alluvium derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat excessively drained
*Slowest permeability*: Rapid (About 6.0 in/hr)
*Available water capacity*: Low (About 3.9 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Negligible
*Non-irrigated land capability*: 3s

***Typical Profile***

*Surface layer:*
0 to 5 inches—strongly acid, brown fine sand
5 to 11 inches—strongly acid, dark yellowish brown fine sand

*Subsurface layer:*
11 to 24 inches—strongly acid, light yellowish brown fine sand

*Subsoil:*
24 to 80 inches—strongly acid, strong brown fine sand

***Use and Management Considerations***

**Cropland**

- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Plant nutrients are leached at an accelerated rate because of the sandy layer.

**Pastureland**
- This soil provides poor summer pasture.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings, and reduce the traction of wheeled harvest equipment and log trucks.
- Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.
- A loss of soil productivity may occur following an episode of uncontrolled fire.

**Building Sites**
- This soil is well suited to use as building sites.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**
- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

**Local Roads and Streets**
- This soil is well suited to use as a site for local roads and streets.

## Hb—Hannahatchee fine sandy loam, occasionally flooded

### *Map Unit Composition*

**Major components:**
Hannahatchee and similar soils: 95 percent

**Contrasting inclusions:**
Mantachie soils: 5 percent. Mantachie soils are dominantly gray, and occur on remnant meander scars.

### *Component Descriptions*

**Hannahatchee**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)

*Available water capacity*: Moderate (About 8.7 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Occasional for brief duration; from March to April
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Negligible
*Non-irrigated land capability*: 2w

### ***Typical Profile***

*Surface layer:*
0 to 15 inches—moderately acid, reddish brown fine sandy loam

*Subsoil:*
15 to 29 inches—moderately acid, yellowish red loam
29 to 49 inches—moderately acid, yellowish red sandy clay loam
49 to 57 inches—moderately acid, yellowish red sandy clay loam
57 to 64 inches—moderately acid, yellowish red and strong brown sandy clay loam
64 to 80 inches—moderately acid, strong brown sandy clay loam

### ***Use and Management Considerations***

**Cropland**
- All areas are prime farmland.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.
- Small grain crops may be damaged by flooding in winter and spring.

**Pastureland**
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Flooding may result in damage to haul roads and increased maintenance costs, and the safe use of roads by log trucks.

**Building Sites**
- Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. These soils are not suited to home sites. Special design of some structures, such as farm outbuildings, may be needed to prevent damage caused by flooding.

**Septic Tank Absorption Fields**
- This soil is not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## Iu—Iulus fine sandy loam, frequently flooded

***Map Unit Composition***

**Major components:**
Iulus and similar soils: 80 percent

**Contrasting inclusions:**
Mantachie soils: 20 percent. Mantachie and similar soils are dominantly gray throughout, and occur on remnant meander scars and oxbows.

***Component Descriptions***

### Iulus

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Moderate (About 9.0 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Frequent for very brief duration; from March to April
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 48 inches, perched; from January to April, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

***Typical Profile***

*Surface layer:*
0 to 8 inches—strongly acid, dark grayish brown fine sandy loam

*Subsoil:*
8 to 24 inches—very strongly acid, yellowish brown fine sandy loam
24 to 37 inches—very strongly acid, brown very fine sandy loam
37 to 53 inches—very strongly acid, light brownish gray very fine sandy loam
53 to 64 inches—very strongly acid, dark yellowish brown very fine sandy loam
64 to 80 inches—very strongly acid, yellowish brown fine sandy loam

***Use and Management Considerations***

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of

constructing haul roads and log landings, increases the difficulty for harvesting equipment to operate safely, and creates unsafe conditions for log trucks.
- Flooding may result in damage to haul roads and increased maintenance costs, and the safe use of roads by log trucks.

**Building Sites**
- This soil is not suited to use for building sites. The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters.

**Septic Tank Absorption Fields**
- This soil is not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## KiC—Kirvin gravelly fine sandy loam, 2 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Kirvin and similar soils: 80 percent

**Contrasting inclusions:**
Bowie soils: 10 percent. Bowie soils are loamy throughout, and occur on similar positions.
Lilbert soils: 10 percent. Lilbert and similar soils have thick sandy surface layers 20 to 40 inches thick, and occur on similar positions.

***Component Descriptions***

**Kirvin**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 2 to 5 percent
*Surface fragments*: Less than 1 percent ironstone gravels
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 7.2 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Medium
*Non-irrigated land capability*: 3e

***Typical Profile***

*Surface layer:*
0 to 3 inches—moderately acid dark grayish brown gravelly fine sandy loam

*Subsurface layer:*
3 to 12 inches—strongly acid pale brown gravelly fine sandy loam

*Subsoil:*
12 to 18 inches—very strongly acid reddish brown clay
18 to 43 inches—very strongly acid red clay

*Substratum:*
43 to 80 inches—extremely acid, reddish brown and light gray stratified sandy clay loam

### *Use and Management Considerations*

**Cropland**
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress during the drier summer months because of the limited available water capacity.
- The rooting depth of crops may be restricted by the high clay content.

**Pastureland**
- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Rock fragments obstruct the use of mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.

**Building Sites**
- The moderate shrink-swell of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**
- The high shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## KiD—Kirvin soils, graded, 2 to 8 percent slopes

***Map Unit Composition***

**Major components:**
Kirvin and similar soils: 95 percent

**Contrasting inclusions:**
Tenaha soils: 5 percent. Tenaha soils have sandy surface layers 20 to 40 inches thick.

***Component Descriptions***

**Kirvin**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Interbedded sandstone and shale
*Slope*: 1 to 5 percent
*Surface fragments*: About 0.00 to 0.01 percent subrounded cobbles
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Very low (About 2.6 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Low
*Non-irrigated land capability*: 4e

***Typical Profile***

*Surface layer:*
0 to 6 inches—very strongly acid, yellowish red sandy clay loam

*Subsoil:*
6 to 24 inches—very strongly acid, brownish yellow and dark red clay loam
24 to 35 inches—very strongly acid, light gray, brownish yellow, and dark red clay loam
35 to 47 inches—very strongly acid, light gray clay loam

*Substratum:*
47 to 80 inches—very strongly acid, light gray clay loam

***Use and Management Considerations***

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.

- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress during the drier summer months because of the limited available water capacity.
- The rooting depth of crops may be restricted by the high clay content.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**

- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, and increases the cost of constructing haul roads and log landings.
- Rock fragments obstruct the use of mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.

**Building Sites**

- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

**Septic Tank Absorption Fields**

- These soils are well suited to use as a site for septic tank absorption fields.

**Local Roads and Streets**

- The shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## KrC—Kirvin very fine sandy loam, 2 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Kirvin and similar soils: 80 percent

**Contrasting inclusions:**
Bowie soils: 10 percent. Bowie soils are loamy throughout, and occur in similar positions.
Lilbert soils: 10 percent. Lilbert and similar soils have thick sandy surface layers, and occur on similar positions.

### *Component Descriptions*

**Kirvin**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve

*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 2 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 7.5 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Medium
*Non-irrigated land capability*: 3e

### *Typical Profile*

*Surface layer:*
0 to 6 inches—strongly acid, brown very fine sandy loam

*Subsoil:*
6 to 17 inches—strongly acid, red clay
17 to 43 inches—very strongly acid, red clay
43 to 51 inches—very strongly acid, red clay loam

*Substratum:*
51 to 80 inches—extremely acid, strong brown and light gray stratified clay loam

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress during the drier summer months because of the limited available water capacity.
- The rooting depth of crops may be restricted by the high clay content.

**Pastureland**

- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer from moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.

**Building Sites**

- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- The high shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## KuA—Kullit very fine sandy loam, 0 to 2 percent slopes

### *Map Unit Composition*

**Major components:**
Kullit and similar soils: 85 percent

**Contrasting inclusions:**
Bowie soils: 15 percent. Bowie soils are well drained soils, and occur on slightly higher positions.

### *Component Descriptions*

**Kullit**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 7.8 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 24 to 36 inches, apparent; from January to May, and December
*Runoff class*: Medium
*Non-irrigated land capability*: 2e

### *Typical Profile*

*Surface layer:*
0 to 7 inches—moderately acid, brown very fine sandy loam

*Subsurface layer:*
7 to 13 inches—slightly acid, light yellowish brown very fine sandy loam

*Subsoil:*
13 to 23 inches—strongly acid, yellowish brown clay loam
23 to 36 inches—very strongly acid, yellowish brown clay loam
36 to 49 inches—very strongly acid, red clay loam
49 to 80 inches—very strongly acid, light brownish gray clay

### *Use and Management Considerations*

**Cropland**

- All areas are prime farmland.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**

- This soil is well suited to pasture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

**Building Sites**

- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## LcB—Latch loamy fine sand, 0 to 2 percent slopes

### *Map Unit Composition*

**Major components:**
Latch and similar soils: 90 percent

**Contrasting inclusions:**
Mollville soils: 10 percent. Mollville soils are gray throughout, and occur in depressional areas.

### *Component Descriptions*

**Latch**

*MLRA*: 133B—Western Coastal Plain

*Landscape:* Coastal plain
*Landform:* Stream terrace
*Parent material*: Sandy alluvium derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Low (About 5.2 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 30 to 48 inches, perched; from January to April
*Runoff class*: Negligible
*Non-irrigated land capability*: 3s

### *Typical Profile*

*Surface layer:*
0 to 7 inches—strongly acid, brown loamy fine sand

*Subsurface layer:*
7 to 19 inches—strongly acid, yellowish brown loamy fine sand
19 to 47 inches—moderately acid, light yellowish brown loamy fine sand
47 to 54 inches—strongly acid, yellowish brown loamy fine sand

*Subsoil:*
54 to 67 inches—strongly acid, yellowish brown sandy clay loam, with dark red masses of oxidized iron
67 to 75 inches—strongly acid, light brownish gray sandy clay loam
75 to 80 inches—strongly acid, light brownish gray loamy fine sand

### *Use and Management Considerations*

**Cropland**

- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress during drier summer months because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

**Pastureland**

- This soil provides poor summer pasture.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- The sandy layers in this soil increase the maintenance of haul roads and log landings, reduce the traction of wheeled harvest equipment and log trucks, and reduce the efficiency of mechanical planting equipment.

- Uncontrolled burning may destroy organic matter.

**Building Sites**

- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- This soil is well suited to use as a site for local roads and streets.

## LmB—Latch-Mollville complex, 0 to 2 percent slopes

***Map Unit Composition***

**Major components:**
Latch and similar soils: 60 percent
Mollville and similar soils: 40 percent

***Component Descriptions***

**Latch**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Pimple mound
*Geomorphic component*: Tread
*Parent material*: Sandy alluvium derived from sedimentary rock
*Slope*: 0 to 2 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: Low (About 5.1 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 30 to 48 inches, perched; from January to April
*Runoff class*: Negligible
*Non-irrigated land capability*: 3s

***Typical Profile***

*Surface layer:*
0 to 5 inches—moderately acid, brown loamy fine sand

*Subsurface layer:*
5 to 16 inches—strongly acid, brown fine sand
16 to 33 inches—strongly acid, yellowish brown fine sand
33 to 56 inches—strongly acid, light yellowish brown fine sand

*Subsoil:*
56 to 69 inches—very strongly acid, yellowish brown fine sandy loam
69 to 75 inches—very strongly acid, light brownish gray loam
75 to 80 inches—very strongly acid, grayish brown clay loam

**Mollville**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: High (About 10.4 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: Frequent for long duration; from January to June, and November to December
*Depth to seasonal water saturation*: At the surface to a depth of 12 inches, apparent; from January to June, and November to December
*Runoff class*: Negligible
*Non-irrigated land capability*: 4w

***Typical Profile***

*Surface layer:*
0 to 6 inches—very strongly acid, dark grayish brown loam

*Subsurface layer:*
6 to 17 inches—very strongly acid, light brownish gray loam

*Subsoil:*
17 to 28 inches—very strongly acid, grayish brown loam
28 to 39 inches—very strongly acid, grayish brown sandy clay loam
39 to 51 inches—very strongly acid, gray sandy clay loam
51 to 69 inches—very strongly acid, grayish brown sandy clay loam

*Substratum:*
69 to 80 inches—extremely acid, grayish brown, light brownish gray, strong brown and yellowish red fine sandy loam

***Use and Management Considerations***

**Cropland**

- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion on the Latch soils.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

- A combination of surface and subsurface drainage helps to remove excess water in the Mollville soils.

**Pastureland**
- These soils are well suited to pasture.

**Woodland**
- Standing water and ponding on Mollville soils can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Ponding on the Mollville soils restricts the safe use of roads by log trucks.
- The sandiness of the Latch soils reduces the traction of wheeled harvest equipment and log trucks, and reduces the efficiency of mechanical planting equipment.
- Uncontrolled burning may destroy organic matter.

**Building Sites**
- The Mollville soils are not suited to building site development.
- Water tends to pond on Mollville soils, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed**.**
- The high content of sand or gravel in the Latch soils reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**
- The Mollville soils are not suited to use as a site for septic tank absorption fields because of ponding.

**Local Roads and Streets**
- The Latch soils are well suited to use as a site for local roads and streets.
- Ponding on the Mollville soils affects the ease of excavation and grading, and limits the bearing capacity of this soil.

## LtB—Latex fine sandy loam, 1 to 3 percent slopes

***Map Unit Composition***

**Major components:**
Latex and similar soils: 80 percent

**Contrasting inclusions:**
Kirvin soils: 10 percent. Kirvin soils have clayey subsoils, and occur on knobs.
Wrightsville soils: 10 percent. Wrightsville soils have clayey subsoils, and occur in depressional areas.

***Component Descriptions***

**Latex**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy eolian deposits over clayey marine deposits derived from sedimentary rock
*Slope*: 1 to 3 percent
*Surface fragments*: None
*Depth to restrictive feature*: None

*Drainage class*: Moderately well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 9.0 inches)
*Shrink-swell potential*: High (About 7.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 36 to 54 inches, perched; from January to April, and December
*Runoff class*: Medium
*Non-irrigated land capability*: 2e

***Typical Profile***

*Surface layer:*
0 to 5 inches—moderately acid, brown fine sandy loam

*Subsurface layer:*
5 to 12 inches—strongly acid, brown fine sandy loam

*Subsoil:*
12 to 17 inches—strongly acid, strong brown sandy clay loam
17 to 28 inches—very strongly acid, yellowish brown sandy clay loam
28 to 38 inches—very strongly acid, red and yellowish brown sandy clay loam
38 to 50 inches—very strongly acid, strong brown, dark red, and light brownish gray clay
50 to 62 inches—very strongly acid, red, light gray, and yellowish brown clay
62 to 80 inches—very strongly acid, light brownish gray, red, and brownish yellow clay

***Use and Management Considerations***

**Cropland**

- All areas are prime farmland.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- The rooting depth of crops may be restricted by the high clay content.

**Pastureland**

- This soil is well suited to pasture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

**Building Sites**

- The severe shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- The high shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## LuC—Lilbert loamy fine sand, 2 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Lilbert and similar soils: 80 percent

**Contrasting inclusions:**
Bowie soils: 10 percent. Bowie soils are loamy throughout, and occur in similar positions.
Kirvin soils: 10 percent. Kirvin soils have clayey subsoils, and some areas have gravelly surface layers, and occur on knobs.

***Component Descriptions***

**Lilbert**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 2 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 6.1 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Low
*Non-irrigated land capability*: 3e

***Typical Profile***

*Surface layer:*
0 to 7 inches—very strongly acid, brown loamy fine sand

*Subsurface layer:*
7 to 20 inches—strongly acid, yellowish brown loamy fine sand
20 to 33 inches—very strongly acid, light yellowish brown loamy fine sand

*Subsoil:*
33 to 55 inches—very strongly acid, yellowish brown sandy clay loam
55 to 68 inches—very strongly acid, yellowish brown sandy clay loam
68 to 80 inches—very strongly acid, yellowish brown, red, and light gray sandy clay loam

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Plant nutrients are leached at an accelerated rate because of the sandy layer.

**Pastureland** (fig. 6)

- Erosion control is needed when pastures are renovated.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings, reduce the traction of wheeled harvest equipment and log trucks, and reduce the efficiency of mechanical planting equipment.
- Uncontrolled burning may destroy organic matter.

**Figure 6.—Ryegrass with chicken houses in the background, on an area of Lilbert loamy fine sand, 2 to 5 percent slopes. Lilbert soils are in Pasture Management Group 6.**

**Building Sites**

- This soil is well suited to use as building sites.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- This soil is well suited to use as a site for local roads and streets.

## Mf—Mantachie loam, frequently flooded

### *Map Unit Composition*

**Major components:**
Mantachie and similar soils: 80 percent

**Contrasting inclusions:**
Iulus soils: 20 percent. Iulus and similar soils are brown, better drained soils, and they occur as natural levees.

### *Component Descriptions*

**Mantachie**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plain
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Moderate (About 0.60 in/hr)
*Available water capacity*: High (About 10.5 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Frequent for long duration, from January to March
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 12 to 18 inches, apparent; from January to March, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

### *Typical Profile*

*Surface layer:*
0 to 8 inches—very strongly acid, dark grayish brown loam

*Subsoil:*
8 to 17 inches—very strongly acid, grayish brown, dark yellowish brown, and reddish brown loam
17 to 29 inches—very strongly acid, light brownish gray loam, with redoximorphic features in shades of red and brown
29 to 73 inches—very strongly acid, dark gray clay loam
73 to 80 inches—very strongly acid, gray clay loam

### *Use and Management Considerations*

**Cropland**

- This soil is not suited to cropland.

**Pastureland**

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

**Woodland**

- A seasonal high water table and standing water can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Flooding and soil wetness may result in damage to haul roads and increased maintenance costs, and restricts the safe use of roads by log trucks.

**Building Sites**

- This soil is not suited to building site development.
- The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters.

**Septic Tank Absorption Fields**

- This soil is not suited to septic tank absorption fields**.** The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## MiA—Metcalf silt loam, 0 to 2 percent slopes

### *Map Unit Composition*

**Major components:**
Metcalf and similar soils: 80 percent

**Contrasting inclusions:**
Sacul soils: 10 percent. Sacul soils have clayey subsoils, and occur on higher positions.
Wrightsville soils: 10 percent. Wrightsville soils have clayey subsoils, and occur in similar positions.

### *Component Descriptions*

**Metcalf**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Parent material*: Loamy alluvium
*Slope*: 0 to 2 percent

*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: High (About 10.4 inches)
*Shrink-swell potential*: High (About 7.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 30 inches, perched; from January to April, and December
*Runoff class*: High
*Non-irrigated land capability*: 2w

### ***Typical Profile***

*Surface layer:*
0 to 4 inches—moderately acid, brown silt loam

*Subsurface layer:*
4 to 10 inches—strongly acid, light yellowish brown silt loam

*Subsoil:*
10 to 30 inches—very strongly acid, yellowish brown clay loam
30 to 45 inches—extremely acid, red and gray clay
45 to 80 inches—extremely acid, yellowish brown, red, and gray clay

### ***Use and Management Considerations***

**Cropland**
- All areas are prime farmland.
- Controlling traffic can minimize soil compaction.
- The rooting depth of crops may be restricted by the high clay content.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

**Pastureland**
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- Restricting grazing during wet periods can minimize compaction.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increases the cost of constructing haul roads and log landings, makes use of harvesting equipment difficult to operate and be damaged, and may create unsafe conditions for log trucks.

**Building Sites**
- This soil is poorly suited to building site development and structures may need special design to avoid damage from wetness.
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance**.**
- The severe shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## MkA—Mollville-Kildare complex, 0 to 1 percent slopes

### *Map Unit Composition*

**Major components:**
Mollville and similar soils: 80 percent
Kildare and similar soils: 15 percent

**Contrasting inclusions:**
Wrightsville soils: 5 percent. Wrightsville soils have clayey subsoils, and occur in similar positions.

### *Component Descriptions*

**Mollville**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: High (About 10.2 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: Frequent for long duration; from January to June, and November to December
*Depth to seasonal water saturation*: At the surface to a depth of 12 inches, apparent; from January to June, and November to December
*Runoff class*: Negligible
*Non-irrigated land capability*: 4w

### *Typical Profile*

*Surface layer:*
0 to 5 inches—very strongly acid, grayish brown loam, with redoximorphic features in shades of brown

*Subsurface layer:*
5 to 14 inches—strongly acid, grayish brown loam, with redoximorphic features in shades of brown

*Subsoil:*
14 to 25 inches—very strongly acid, gray clay loam, with redoximorphic features in shades of red and brown
25 to 34 inches—very strongly acid, gray clay loam, with redoximorphic features in shades of red and brown
34 to 50 inches—very strongly acid, grayish brown clay loam, with redoximorphic features in shades of brown
50 to 63 inches—very strongly acid, gray clay loam, with redoximorphic features in shades of red
63 to 80 inches—very strongly acid, light brownish gray clay loam, with redoximorphic features in shades of red

**Kildare**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature*: Closed depression
*Parent material*: Loamy alluvium
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: 25 to 40 inches to fragipan
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: Moderate (About 7.2 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: Occasional
*Depth to seasonal water saturation*: At the surface to a depth of 12 inches, perched; from January to April, and November to December
*Runoff class*: Negligible
*Non-irrigated land capability*: 2w

***Typical Profile***

*Surface layer:*
0 to 7 inches—extremely acid, very dark grayish brown and dark brown silt loam, with redoximorphic features in shades of brown

*Subsurface layer:*
7 to 14 inches—very strongly acid, grayish brown silt loam

*Subsoil:*
14 to 25 inches—very strongly acid, 70 percent dark grayish brown and 30 percent grayish brown loam
25 to 30 inches—very strongly acid, 70 percent dark grayish brown and 20 percent grayish brown loam, with redoximorphic features in shades of brown
30 to 36 inches—very strongly acid, dark grayish brown loam, with redoximorphic features in shades of brown
36 to 42 inches—very strongly acid, dark grayish brown loam, with redoximorphic features in shades of brown
42 to 45 inches—strongly acid, light brownish gray fine sandy loam, with redoximorphic features in shades of brown

*Substratum:*
45 to 67 inches— very strongly acid, pale brown loamy fine sand, with redoximorphic features in shades of brown
67 to 80 inches— very strongly acid, pale brown loamy fine sand, with redoximorphic features in shades of brown

***Use and Management Considerations***

**Cropland**
- All areas are prime farmland.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A combination of surface and subsurface drainage helps to remove excess water.
- The rooting depth of crops is restricted by dense soil material in the Kildare soils.

**Pastureland**
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- The rooting depth of plants may be restricted by a dense soil layer.

**Woodland**
- A seasonal high water table and standing water can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Soil wetness and ponding may limit the use of this soil by log trucks.

**Building Sites**
- These soils are not suited to building site development.
- Water tends to pond on these soils, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed.
- The high content of sand or gravel in the Kildare soils reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**
- These soils are not suited to use as a site for septic tank absorption fields because of ponding.

**Local Roads and Streets**
- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- The high shrink-swell potential of this soil may not be suitable for use as base material for local roads and streets.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## MIA—Mollville loam, 0 to 1 percent slopes

***Map Unit Composition***

**Major components:**
Mollville and similar soils: 90 percent

**Contrasting inclusions:**
Thage soils: 4 percent. Thage soils have a fragipan at 20 to 40 inches.
Gallime soils: 3 percent. Gallime soils have thick fine sandy loam surfaces.

Alazan soils: 3 percent. Alazan soils have wetness features, and occur in slightly lower positions.

### *Component Descriptions*

**Mollville**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: High (About 9.3 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: Frequent for long duration; from January to June, and November to December
*Depth to seasonal water saturation*: At the surface to a depth of 12 inches, apparent; from January to June, and November to December
*Runoff class*: Negligible
*Non-irrigated land capability*: 4w

### *Typical Profile*

*Surface layer:*
0 to 3 inches—very strongly acid, dark grayish brown loam

*Subsurface layer:*
3 to 9 inches—very strongly acid, light brownish gray loam

*Subsoil:*
9 to 45 inches—very strongly acid, grayish brown clay loam
45 to 57 inches—moderately acid, grayish brown clay loam
57 to 65 inches—slightly acid, grayish brown sandy clay loam

*Substratum:*
65 to 80 inches—neutral, light gray fine sandy loam

### *Use and Management Considerations*

**Cropland**

- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A combination of surface and subsurface drainage helps to remove excess water.

**Pastureland**

- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

**Woodland**

- A seasonal high water table and standing water can inhibit the growth of some species of seedlings by reducing root respiration.

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Soil wetness and ponding may limit the use of this soil by log trucks.

**Building Sites**

- This soil is not suited to building site development.
- The period when excavations can be made may be restricted, and intensive construction site development and building maintenance may be needed because of ponding.

**Septic Tank Absorption Fields**

- This soil is not suited to use as a site for septic tank absorption fields because of ponding.

**Local Roads and Streets**

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- The shrink-swell potential of this soil may not be suitable for use as base material for local roads and streets.
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## Mm—Mooreville-Mantachie complex, frequently flooded

### *Map Unit Composition*

**Major components:**
Mooreville and similar soils: 50 percent
Mantachie and similar soils: 30 percent

**Contrasting inclusions:**
Iulus soils: 20 percent. Iulus soils are coarse loamy, and they occur as natural levees.

### *Component Descriptions*

**Mooreville**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: High (About 9.7 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: Frequent for brief duration; from January to March
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 36 inches, apparent; from January to March
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

### *Typical Profile*

*Surface layer:*
0 to 4 inches—strongly acid, brown silt loam

4 to 9 inches—strongly acid, brown loam

*Subsoil:*
9 to 22 inches—very strongly acid, yellowish brown loam
22 to 37 inches—very strongly acid, yellowish brown sandy clay loam
37 to 57 inches—very strongly acid, gray sandy clay loam
57 to 80 inches—very strongly acid, light brownish gray fine sandy loam

**Mantachie**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plain
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Moderate (About 0.60 in/hr)
*Available water capacity*: Moderate (About 8.6 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Frequent for long duration; from January to March, and December
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 12 to 18 inches, apparent; from January to March, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

***Typical Profile***

*Surface layer:*
0 to 4 inches—strongly acid, brown loam
4 to 9 inches—strongly acid, brown fine sandy loam, with redoximorphic features in shades of brown

*Subsoil:*
9 to 16 inches—very strongly acid, brown loam, with redoximorphic features in shades of brown and gray
16 to 25 inches—very strongly acid, grayish brown loam
25 to 32 inches—very strongly acid, light brownish gray loam, with redoximorphic features in shades of brown
32 to 42 inches—very strongly acid, grayish brown clay loam, with redoximorphic features in shades of brown
42 to 56 inches—very strongly acid, dark gray clay loam with redoximorphic features in shades of brown

*Substratum:*
56 to 69 inches—extremely acid, gray loam, with redoximorphic features in shades of brown
69 to 80 inches—extremely acid, gray clay loam with redoximorphic features in shades of brown

***Use and Management Considerations***

**Cropland**

- These soils are suited to cropland.

**Pastureland**

- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

**Woodland**

- Standing water can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, harvesting equipment may be difficult to operate and be damaged, and may create unsafe conditions for log trucks.
- Flooding may result in damage to haul roads and increased maintenance costs, and restrict the safe use of roads by log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Building Sites**

- These soils are not suited to building site development.
- The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters.

**Septic Tank Absorption Fields**

- These soils are not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**

- The shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## RgC—Redsprings gravelly fine sandy loam, 2 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Redsprings and similar soils: 80 percent

**Contrasting inclusions:**
Minor components soils: 20 percent

***Component Descriptions***

**Redsprings**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain

*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from glauconitic sandstone
*Slope*: 2 to 5 percent
*Surface fragments*: Less than 1 percent ironstone gravels
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: Moderate (About 7.2 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Very high
*Non-irrigated land capability*: 3e

### ***Typical Profile***

*Surface layer:*
0 to 4 inches—moderately acid, reddish brown gravelly fine sandy loam

*Subsoil:*
4 to 50 inches—very strongly acid, red clay

*Substratum:*
50 to 76 inches—very strongly acid, light brownish gray and dusky red clay
76 to 80 inches—very strongly acid, yellowish red fine sandy loam

### ***Use and Management Considerations***

**Cropland**
- All areas are prime farmland.
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress during the drier summer months because of the limited available water capacity.
- The rooting depth of crops may be restricted by the high clay content.

**Pastureland**
- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland** (fig. 7)
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Rock fragments obstruct the use of mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Figure 7.—Loblolly pines in an area of Redsprings gravelly fine sandy loam, 2 to 5 percent slopes. Loblolly pines are used mostly for pine plantations.**

**Building Sites**

- The moderate shrink-swell potential of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- The shrink-swell potential of this soil may not be suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## RnB—Rentzel loamy fine sand, 0 to 3 percent slopes

### *Map Unit Composition*

**Major components:**
Rentzel and similar soils: 80 percent

**Contrasting inclusions:**
Bibb soils: 5 percent. Bibb soils are seeps, and occur on toeslopes.
Iulus soils: 5 percent. Iulus soils are loamy, and occur on flood plains.
Sacul soils: 10 percent. Sacul soils have clayey subsoils, and occur on heads of drains.

### *Component Descriptions*

**Rentzel**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Toeslopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Slope*: 0 to 3 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 6.3 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 36 inches, perched; from January to March
*Runoff class*: Low
*Non-irrigated land capability*: 3w

### *Typical Profile*

*Surface layer:*
0 to 11 inches—moderately acid, brown loamy fine sand

*Subsurface layer:*
11 to 25 inches—moderately acid, pale brown loamy fine sand

*Subsoil:*
25 to 28 inches—strongly acid, yellowish brown sandy clay loam
28 to 43 inches—very strongly acid, yellowish brown sandy clay loam
43 to 52 inches—strongly acid, yellowish brown and light brownish gray fine sandy loam
52 to 65 inches—strongly acid, yellowish brown fine sandy loam
65 to 80 inches—very strongly acid, brownish yellow sandy clay loam

### *Use and Management Considerations*

**Cropland**

- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Plant nutrients are leached at an accelerated rate because of the sandy layer.

**Pastureland**

- This soil is well suited to pasture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings, reduce the traction of wheeled harvest equipment and log trucks, and reduce the efficiency of mechanical planting equipment.
- A loss of soil productivity may occur following an episode of uncontrolled fire.

**Building Sites**

- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Local Roads and Streets**

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.

## SaC—Sacul very fine sandy loam, 1 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Sacul and similar soils: 85 percent

**Contrasting inclusions:**
Bowie soils: 15 percent. Bowie soils are loamy, better drained soils, and occur on higher positions.

### *Component Descriptions*

**Sacul**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 1 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Moderately well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Available water capacity*: High (About 9.1 inches)
*Shrink-swell potential*: High (About 7.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 24 to 48 inches, perched; from January to April, and December
*Runoff class*: High
*Non-irrigated land capability*: 4e

### *Typical Profile*

*Surface layer:*
0 to 4 inches—very strongly acid, dark grayish brown very fine sandy loam, with redoximorphic features in shades of brown

*Subsurface layer:*
4 to 11 inches—very strongly acid, light yellowish brown very fine sandy loam with redoximorphic features in shades of red and brown

*Subsoil:*
11 to 17 inches—very strongly acid, red clay, with redoximorphic features in shades of brown or yellow
17 to 24 inches—very strongly acid, red clay, with redoximorphic features in shades of brown
24 to 31 inches—very strongly acid, pale brown, reddish brown, and light brownish gray clay, with redoximorphic features in shades of brown
31 to 41 inches—very strongly acid, light brownish gray clay loam, with redoximorphic features in shades of brown
41 to 45 inches—very strongly acid, light brownish gray clay loam, with redoximorphic features in shades of brown

*Substratum:*
45 to 80 inches—very strongly acid, light brownish gray, red, and strong brown stratified fine sandy loam

### *Use and Management Considerations*

**Cropland**
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- The rooting depth of crops may be restricted by the high clay content.

**Pastureland** (fig. 8)
- Erosion control is needed when pastures are renovated.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Rock fragments obstruct the use of mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment, and restricts the use of equipment for site preparation to drier periods.

**Building Sites**
- The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

**Figure 8.—A pasture and farm pond in an area of Sacul very fine sandy loam, 1 to 5 percent slopes.**

**Local Roads and Streets**

- The shrink-swell potential of this soil may not be suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

## SlC—Sailes fine sandy loam, 1 to 5 percent slopes

***Map Unit Composition***

**Major components:**
Sailes and similar soils: 85 percent

**Contrasting inclusions:**
Briley soils: 15 percent. Sailes soils have thick sandy surfaces 20 to 40 inches thick, and occur on similar positions.

***Component Descriptions***

**Sailes**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Hillslope position*: Summit, shoulder
*Parent material*: Loamy marine deposits
*Slope*: 1 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Moderate (About 0.60 in/hr)
*Available water capacity*: Moderate (About 8.9 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None

*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Medium
*Non-irrigated land capability*: 3e

### *Typical Profile*

*Surface layer:*
0 to 6 inches—very strongly acid, brown fine sandy loam

*Subsoil:*
6 to 13 inches—strongly acid, yellowish red sandy clay loam
13 to 28 inches—moderately acid, red sandy clay loam
28 to 63 inches—very strongly acid, red sandy clay loam
63 to 72 inches—strongly acid, yellowish red sandy clay loam
72 to 87 inches—very strongly acid, strong brown sandy clay loam

### *Use and Management Considerations*

**Cropland**
- All areas are prime farmland.
- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.

**Pastureland**
- Erosion control is needed when pastures are renovated.

**Woodland**
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Rock fragments obstruct the use of mechanical planting equipment.

**Building Sites**
- This soil is well suited to use as building sites.

**Septic Tank Absorption Fields**
- The moderate permeability of this soil within the depth of the drain field somewhat limits the absorption of the effluent from septic systems. An oversized drain field may be needed.

**Local Roads and Streets**
- This soil is well suited to use as a site for local roads and streets.

## Sm—Sardis-Manco complex, frequently flooded

### *Map Unit Composition*

**Major components:**
Sardis and similar soils: 60 percent
Manco and similar soils: 40 percent

### *Component Descriptions*

**Sardis**

*MLRA*: 133B—Western Coastal Plain

*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: High (About 11.7 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Frequent for brief duration; from January to May, and December
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 18 to 36 inches, perched; from January to May, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 4w

***Typical Profile***

*Surface layer:*
0 to 5 inches—very strongly acid, brown loam

*Subsoil:*
5 to 36 inches—very strongly acid, dark yellowish brown silt loam
36 to 51 inches—very strongly acid, yellowish brown silt loam

*Substratum:*
51 to 63 inches—very strongly acid, yellowish brown, strong brown, light brownish gray, and grayish brown sandy loam
63 to 73 inches—very strongly acid, yellowish brown, light brownish gray, light gray, and strong brown sandy loam
73 to 80 inches—very strongly acid, light gray sandy loam

**Manco**

*MLRA*: 133B—Western Coastal Plain
*Landscape*: Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Somewhat poorly drained
*Slowest permeability*: Moderate (About 0.6 in/hr)
*Available water capacity*: High (About 10.7 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: Frequent for long duration; from January to December
*Ponding hazard*: None
*Depth to seasonal water saturation*: About 12 to 18 inches, apparent; from January to May, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

***Typical Profile***

*Surface layer:*
0 to 3 inches—very strongly acid, dark grayish brown silt loam
3 to 6 inches—very strongly acid, brown silt loam

*Subsoil:*
6 to 24 inches—very strongly acid, grayish brown silt loam
24 to 48 inches—very strongly acid, gray silt loam
48 to 58 inches—very strongly acid, gray silty clay loam
58 to 65 inches—very strongly acid, light brownish gray silty clay loam
65 to 80 inches—very strongly acid, light brownish gray clay loam

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland unless protected from flooding.
- Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

**Pastureland**
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

**Woodland**
- Standing water can inhibit the growth of some species of seedlings by restricting root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, and increase the cost of constructing haul roads and log landings.
- Flooding may result in damage to haul roads and increase maintenance costs, and restrict the safe use of roads by log trucks.

**Building Sites**
- These soils are not suited to building site development.
- The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters.

**Septic Tank Absorption Fields**
- These soils are not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## So—Socagee silty clay loam, frequently flooded

### *Map Unit Composition*

**Major components:**
Socagee and similar soils: 80 percent

**Contrasting inclusions:**
Iulus soils: 20 percent. Iulus soils are better drained, and occur on natural levees.

### *Component Descriptions*

**Socagee**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: High (About 10.8 inches)
*Shrink-swell potential*: Moderate (About 4.5 LEP)
*Flooding hazard*: Frequent for brief duration; from January to May
*Ponding hazard*: None
*Depth to seasonal water saturation*: At the surface to a depth of 18 inches, perched; from January to May, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 5w

### *Typical Profile*

*Surface layer:*
0 to 2 inches—very strongly acid, brown silty clay loam
2 to 5 inches—very strongly acid, grayish brown silty clay loam

*Subsoil:*
5 to 17 inches—very strongly acid, gray silt loam
17 to 60 inches—very strongly acid, gray clay loam
60 to 80 inches—very strongly acid, grayish brown silty clay loam

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.
- Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- Restricting grazing during wet periods can minimize compaction.

**Woodland**
- A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, increase the cost of constructing haul roads and log landings, increase the difficulty for harvesting equipment to operate safely, and create unsafe conditions for log trucks.
- Flooding and wetness may result in damage to haul roads, increase maintenance costs, and restrict the safe use of roads by log trucks.

- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Building Sites**

- This soil is not suited to building site development.
- The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters.

**Septic Tank Absorption Fields**

- This soil is not suited to use as a site for septic tank absorption fields because of a seasonal high water table and flooding.
- This soil is not suited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Floodwaters may damage some components of septic systems.

**Local Roads and Streets**

- The shrink-swell potential of this soil may not be suitable for use as base material for local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.
- Special design of roads and bridges is needed to prevent the damage caused by flooding.

## SPY—Spillway

A detention-type structure, either earthen or mechanical, used to control the grade and head cutting in natural or artificial channels.

## TnB—Tenaha loamy fine sand, 1 to 5 percent slopes

### *Map Unit Composition*

**Major components:**
Tenaha and similar soils: 80 percent

**Contrasting inclusions:**
Kirvin soils: 20 percent. Kirvin soils have loamy surface layers and clayey subsoils.

### *Component Descriptions*

**Tenaha**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 1 to 5 percent
*Surface fragments*: None
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 6.3 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)

*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Low
*Non-irrigated land capability*: 3s

### *Typical Profile*

*Surface layer:*
0 to 7 inches—moderately acid, dark brown loamy fine sand

*Subsurface layer:*
7 to 23 inches—moderately acid, light yellowish brown loamy fine sand

*Subsoil:*
23 to 34 inches—strongly acid, strong brown sandy clay loam
34 to 41 inches—very strongly acid, red and strong brown and yellowish brown sandy clay loam
41 to 48 inches—very strongly acid, brownish yellow fine sandy loam

*Substratum:*
48 to 55 inches—very strongly acid, red stratified fine sandy loam
55 to 80 inches—very strongly acid, red stratified sandy loam

### *Use and Management Considerations*

**Cropland**

- Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.
- Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.
- Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.
- Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress during the drier summer months because of the limited available water capacity.
- Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- Plant nutrients are leached at an accelerated rate because of the sandy layer.

**Pastureland**

- This soil provides poor summer pasture.
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**

- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Sandy layers in this soil increase the maintenance of haul roads and log landings, reduce the traction of wheeled harvest equipment and log trucks, and reduce the efficiency of mechanical planting equipment.
- Uncontrolled burning may destroy organic matter.

**Building Sites**

- These soils are well suited to use as building sites.
- Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavation. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**

- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

**Local Roads and Streets**

- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

## TnD—Tenaha loamy fine sand, 5 to 15 percent slopes

***Map Unit Composition***

**Major components:**
Tenaha and similar soils: 80 percent

**Contrasting inclusions:**
Bowie soils: 10 percent. Bowie soils are loamy throughout, and occur on ridges.
Duffern soils: 10 percent. Duffern soils are sandy throughout, and occur on similar positions.

***Component Descriptions***

**Tenaha**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 5 to 15 percent
*Surface fragments*: None
*Depth to restrictive feature*: 40 to 60 inches to densic material
*Drainage class*: Well drained
*Slowest permeability*: Moderately slow (About 0.20 in/hr)
*Available water capacity*: Moderate (About 6.5 inches)
*Shrink-swell potential*: Low (About 1.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Medium
*Non-irrigated land capability*: 6e

***Typical Profile***

*Surface layer:*
0 to 3 inches—strongly acid, brown loamy fine sand

*Subsurface layer:*
3 to 14 inches—strongly acid, yellowish brown loamy fine sand
14 to 24 inches—strongly acid, yellowish brown loamy fine sand

*Subsoil:*
24 to 35 inches—very strongly acid, yellowish red clay loam

35 to 43 inches—very strongly acid, yellowish red sandy clay loam
43 to 55 inches—very strongly acid, strong brown sandy clay loam

*Substratum:*
55 to 80 inches—pinkish gray, light gray, and strong brown sandy clay loam

### *Use and Management Considerations*

**Cropland**
- These soils are not suited to cropland.

**Pastureland**
- Erosion control is needed when pastures are renovated.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.
- This soil provides poor summer pasture.

**Woodland**
- If the soil is disturbed, the steeper slope increases the hazard of erosion.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment, and increases the cost of constructing haul roads and log landings.
- The steeper slope creates unsafe operating conditions and reduces the operating efficiency of log trucks, and restricts the use of some mechanical planting equipment.
- The sandy nature of the soil may reduce the traction of wheeled harvest equipment and log trucks, and sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Uncontrolled burning may destroy organic matter.

**Building Sites**
- The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.
- The high content of sand or gravel in the soil reduces the resistance to sloughing in shallow excavations. Cutbanks are susceptible to caving.

**Septic Tank Absorption Fields**
- The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.
- The steeper slopes require special design and installation techniques for the effluent distribution lines.

**Local Roads and Streets**
- Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.
- The steeper slopes require special design for local roads and streets.

## Ud—Udorthents, gravelly

### *Map Unit Composition*

**Major components:**
Udorthents and similar soils: 85 percent.

**Contrasting inclusions:**

Kirvin soils: 10 percent. Kirvin soils have clayey subsoils, and occur on knobs.

Tenaha soils: 5 percent. Tenaha soils have sandy surface layers 20 to 40 inches thick, and occur on side slopes.

### *Component Descriptions*

**Udorthents**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Interfluve
*Other features*: These areas have been mined for gravel (fig. 9)
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Slope*: 1 to 2 percent
*Surface fragments*: Less than 1 percent ironstone gravels
*Depth to restrictive feature*: None
*Drainage class*: Well drained
*Slowest permeability*: Slow (About 0.06 in/hr)
*Flooding hazard*: None
*Ponding hazard*: None
*Depth to seasonal water saturation*: Greater than 6 feet
*Runoff class*: Low
*Non-irrigated land capability*: 6e

**Figure 9.—An area of Udorthents, gravelly. The entire soil profile was removed for road construction.**

### *Typical Profile*

*Surface layer:*
0 to 1 inches—moderately acid, reddish brown gravelly fine sandy loam

*Subsoil:*
1 to 9 inches—strongly acid, yellowish red fine sandy loam

*Substratum:*
9 to 80 inches—very strongly acid, strong brown loamy fine sand

### *Use and Management Considerations*

**Cropland**
- This soil is not suited to cropland.

**Pastureland**
- This soil provides poor summer pasture.
- Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.
- Using a system of seedbed preparation that minimizes soil disturbance when pastures are renovated conserves soil moisture.

**Woodland**
- The limited available water capacity inhibits root development and increases the seedling mortality rate.
- The low soil reaction causes a nutrient imbalance in seedlings.

**Building Sites**
- This soil is well suited to use as building sites.

**Septic Tank Absorption Fields**
- The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

**Local Roads and Streets**
- This soil is well suited to use as a site for local roads and streets.

## W—Water

These are areas of water, either natural or man-made.

## WrA—Wrightsville silt loam, 0 to 1 percent slopes, ponded

### *Map Unit Composition*

**Major components:**
Wrightsville and similar soils: 90 percent

**Contrasting inclusions:**
Erno soils: 10 percent. Erno soils are well drained, and occur as circular to oval mounds.

### *Component Descriptions*

**Wrightsville**

*MLRA*: 133B—Western Coastal Plain
*Landscape:* Coastal plain
*Landform:* Stream terrace

*Microfeature:* Open depression
*Parent material*: Silty and clayey alluvium derived from sedimentary rock
*Slope*: 0 to 1 percent
*Surface fragments*: None
*Depth to restrictive feature*: None
*Drainage class*: Poorly drained
*Slowest permeability*: Very slow (less than 0.06 in/hr)
*Available water capacity*: High (About 11.0 inches)
*Shrink-swell potential*: High (About 7.5 LEP)
*Flooding hazard*: None
*Ponding hazard*: Frequent for long duration; from January to April, and December
*Depth to seasonal water saturation*: About 6 to 18 inches, perched; from January to April, and December
*Runoff class*: Negligible
*Non-irrigated land capability*: 4w

### *Typical Profile*

*Surface layer:*
0 to 3 inches—extremely acid, dark grayish brown silt loam

*Subsurface layer:*
3 to 11 inches—very strongly acid, light brownish gray silt loam, with redoximorphic features in shades of brown

*Subsoil:*
11 to 19 inches—very strongly acid, grayish brown silty clay loam
19 to 35 inches—extremely acid, dark grayish brown silty clay loam
35 to 47 inches—extremely acid, dark grayish brown clay loam
47 to 68 inches—extremely acid, grayish brown clay loam
68 to 80 inches—extremely acid, grayish brown clay

### *Use and Management Considerations*

**Cropland**
- Controlling traffic can minimize soil compaction.
- The rooting depth of crops may be restricted by the high clay content.
- Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.
- A combination of surface and subsurface drainage helps to remove excess water.
- The movement of water into subsurface drains is restricted.
- Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

**Pastureland**
- Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.
- Restricting grazing during wet periods can minimize compaction.

**Woodland**
- A seasonal high water table and standing water can inhibit the growth of some species of seedlings by reducing root respiration.
- The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.
- Soil wetness and ponding limits the safe use of this soil by log trucks.

- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

**Building Sites**

- This soil is not suited to building site development.
- The period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed because of ponding.
- The high content of clay in the soil below the surface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

**Septic Tank Absorption Fields**

- This soil is not suited to use as a site for septic tank absorption fields because of ponding.

**Local Roads and Streets**

- Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.
- The shrink-swell potential of this soil is not suitable for use as base material for local roads and streets.
- The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

# Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 5 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

In Marion and Cass Counties, about 240,777 acres, or nearly 27 percent of the total acreage meets the soil requirements for prime farmland. Areas of these soils are scattered throughout the counties.

A recent trend in land uses in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

# Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. In addition, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for rangeland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both descriptive and numerical.

### Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

### Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

# Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Texas AgriLife Extension Service.

## Crops

Soils used as cropland are managed to control water erosion, maintain tilth and fertility, and in some cases, drain off excess water. The major practices used to accomplish these purposes are:

*Using crop residue*—Leaving crop residue on the soil helps to control water erosion and conserve moisture. Incorporating residue into the soil helps to improve tilth and the available water capacity.

*Farming on the contour*—Terracing and farming on the contour help to control water erosion. This is beneficial on most soils that have slopes of more than 1 percent.

*Using cover crops*—Cover crops furnish protective cover after the crop has been harvested and before the next cultivated crop is planted. Some cover crops suitable for most of the soils in the survey area are small grain, vetch, and mixtures of annual grasses and legumes.

*Maintaining fertility*—-Most crops respond well to commercial fertilizer. Where the proper amounts and kinds of fertilizer are applied and proper management is used, soil fertility levels can be maintained.

Information on these soil management practices can be obtained at the local office of the Natural Resources Conservation Service.

## Pasture Management and Productivity

Marion and Cass counties have about 247,613 acres of pastureland. Of this total, about 45,100 is native pasture, and the rest of the acreage is improved pasture. Areas of native pasture are covered with plants that commonly reseed naturally. Brush must be controlled, and fertilizer and lime may be added occasionally. Common grasses in these pastures vary with types of soils. On the bottomland soils, natural grasses growing include carpetgrass, dallisgrass, vaseygrass, and various panicums. The loamy uplands may be dominated by various bluestems, such as broomsedge and pinehill. Overgrazed sandy uplands may be covered with broomsedge bluestem, needlegrass, and burgrass.

Several different plants have been introduced in an area of improved pasture. Improved bermudagrass, such as coastal, has greatly increased the yields that can be expected on most soils. On wetter bottomland soils, bahiagrass may offer the highest yield. In some cases, lovegrass may be better suited on very sandy soils. For grazing, many areas of improved pasture are overseeded with legumes. On wetter bottomland soils, white clover is best suited. Crimson clover, arrowleaf clover, or vetch is better suited on most upland soils.

Proper management is necessary on all soils. In east Texas, brush will infest all areas if it is not removed by shredding or chemical applications. Management includes proper grazing use or mowing schedules. Areas of improved pasture can be severely damaged if overgrazed. Liming and fertilization are also necessary if high yields are to be expected.

## Pasture Management Groups

The soils in Marion and Cass counties have been grouped according to their suitability for pasture management.

There are thirteen groups of soil suited to pasture management and one group is not suited to pasture management. Each group is made up of soils with similar properties and that respond to similar management practices. The landscape position and chemical and physical properties of the soils were considered in assigning soils to each group. Also explained in each group are yields, management problems and plant adaptability that can be expected in areas of improved pasture. For example, Manco and Mantachie soils are poorly suited to the production of grasses and legumes under normal conditions. This means that in a natural state, without drainage and flooding protection, land users will have difficulty establishing improved grasses on these soils. However, these same soils may do well in areas of native pasture.

The term "animal unit months" (AUM) is used to describe the production that might be expected. Proper management is necessary if high yields are expected. An animal unit month is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month. For example, eight animal unit months will feed a 1,000-pound animal for eight months. Five months of this time may be from grazing, and three months may be from hay harvested from the same acre in a normal year.

#### Pasture Management Group 1

The Bernaldo (BaB), Erno-Thago complex (EtA), and Gallime (GaA) map units are in this group. These nearly level to moderately sloping soils are on terraces. They have loamy surface layers, loamy subsoils, and are well drained.

These soils have no major limitations for use as pasture, and are very well suited to the production of grasses and legumes. Minor limitations of acidity and inadequate fertility are easily corrected with additions of lime and fertilizer.

Adapted grasses on these soils used for forage production include improved bermudagrass and bahiagrass, which can be overseeded with legumes, such as crimson clover, white dutch clover, arrowleaf clover, or vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about eight to nine AMUs of grazing and hay in a normal year.

#### Pasture Management Group 2

The Hannahatchee (Hb), Iulus (Iu), and Mooreville-Mantachie complex (Mm) map units are in this group. These nearly level soils are on broad flood plains of smaller streams. They have loamy surface layers, loamy subsoils, are well drained and moderately well drained, and may flood annually.

These soils are very well suited to the production of grasses and legumes. Flooding and slight wetness in some years may interfere with establishment, maintenance, and harvesting of the forage produced.

Adapted grasses on these soils used for forage production include improved bermudagrass, fescue, and bahiagrass, which can be overseeded with legumes, such as crimson clover, white clover, or vetch. With proper management, including liming, fertilizing, and rotational grazing, fescue or bahiagrass will produce about eight to nine AUM of grazing and hay, in a normal year.

#### Pasture Management Group 3

The Alazan (AaB), Eylau (EyB), Kullit (KuA), Latex (LtB), Metcalf (MiA), and Erno-Thage complex (EtA) map units are in this group. They have loamy surface layers over loamy subsoils. They are moderately well drained and somewhat poorly drained.

These soils have no major limitations for use as a pasture, and are very well suited to the production of grasses and legumes. Minor limitations of acidity and inadequate fertility are easily corrected with additions of lime and fertilizer.

Adapted grasses on these soils used for forage production include improved bermudagrass and bahiagrass, which can be overseeded with legumes such as crimson clover, white dutch clover, arrowleaf clover, or vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about eight to nine AUM of grazing and hay in a normal year.

**Pasture Management Group 4**

The Bowie (BoC), Elrose (ElA), Kirvin (KiC, KrC), Redsprings (RgC), and Sailes (SlC) map units are in this group. These gently sloping to moderately sloping soils are on interstream divides on uplands. They have loamy surface layers over loamy subsoils, and are well drained.

These soils have no major limitations for use as pasture, and are well suited to the production of grasses and legumes. However, moderate available water capacity slightly lowers potential forage production. Minor limitations of soil acidity and inadequate fertility are easily corrected with additions of lime and fertilizer.

Adapted grasses on these soils used for forage production include improved bermudagrass and bahiagrass, which can be overseeded with legumes, such as crimson clover or vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about seven AUM of grazing and hay in a normal year.

**Pasture Management Group 5**

The Hainesville (HaA), Latch (LcB), and Rentzel (RnB) map units are in this group. These nearly level and very gently sloping soils are on concave lower slopes, uplands, and stream terraces. They have sandy surface layers over loamy or sandy subsoils, and are excessively drained, somewhat excessively drained, and somewhat poorly drained.

These soils have no major limitations for pasture and moderately well suited to the production of grasses and legumes. Production is limited because of the thick, sandy surface layers allowing rapid movement of water and nutrients into and through the plant root zone. This results in low inherent soil fertility and limited water storage available for plant production. Minor limitations of soil acidity and inadequate fertility are easily corrected with additions of lime and fertilizer. Slightly wet conditions during the winter and early spring may interfere with harvesting hay, grazing rotation, or using equipment.

Adapted grasses on these soils used for forage production include weeping lovegrass and improved bermudagrass, which can be overseeded with legumes, such as vetch. With proper management, including liming, split applications of fertilizer, and rotational grazing, improved bermudagrass will produce about seven AUM of grazing and hay in a normal year.

**Pasture Management Group 6**

The Briley (BrB), Darco (DaB), Lilbert (LuC), and Tenaha (TnB) map units are in this group.

These gently sloping to moderately sloping soils are on broad interstream divides on uplands. They have thick sandy surface layers over loamy subsoils, and are somewhat excessively drained and well drained.

These soils are moderately well suited to the production of grasses and legumes. Production is limited because of the sandy surface layer allowing rapid movement of water and nutrients into and through the plant root zone. This results in low inherent soil fertility and limited available water capacity for plant production.

Adapted grasses on these soils used for forage production include weeping lovegrass and improved bermudagrass, which can be overseeded with legumes such as vetch.

With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about five to six AUM of grazing and hay in a normal year.

**Pasture Management Group 7**

The Eastwood (EeB) and Sacul (SaC) map units are in this group.

These gently sloping soils are on broad interstream divides on uplands. They have loamy surface layers, clayey subsoils, and are moderately well drained.

These soils are moderately well suited to the production of grasses and legumes. Production is decreased slightly because of the clayey subsoil, which limits water intake and storage for plant production. Minor limitations of soil acidity and inadequate fertility are easily corrected with addition of lime and fertilizer.

Adapted grasses on these soils used for forage production include improved bermudagrass and bahiagrass, which can be overseeded with legumes such as crimson clover or vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about four to five AUM of grazing and hay in a normal year.

**Pasture Management Group 8**

The Darco (DaE) and Tenaha (TnD) map units are in this group.

These strongly sloping to moderately steep soils are on broad interstream divides on uplands. They have thick sandy surface layers over loamy subsoils, and are somewhat excessively drained and well drained.

These soils are moderately well suited to the production of grasses and legumes. Production is limited because of sandy surface layers allowing rapid movement of water and nutrients through the plant root zone. This results in low inherent fertility and limited water storage available for plant production. Also as slopes increase above 10 percent, equipment use is impaired because of the loose sandy surface.

Adapted grasses on these soils used for forage production include weeping lovegrass and improved bermudagrass, which can be overseeded with legumes such as vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about four to five AUM of grazing and hay in a normal year.

**Pasture Management Group 9**

The Cuthbert and Redsprings (CrG, CtE, CuE) and Eastwood (EeD) map units are in this group (fig. 10).

These strongly sloping to moderately steep soils are on broad interstream divides on uplands. They have loamy surface layers, clayey subsoils, and are moderately well drained.

These soils are moderately well suited to the production of grasses and legumes. Production is limited because of clayey subsoil, which limits water intake and storage for plant production. Also, as slope increase above 10 percent, water runoff increases and less water is able to enter the root zone and be stored for plant production. Steeper slopes also increase the hazard of excessive erosion during pasture establishment, pasture renovation, or if the pasture is overgrazed.

Adapted grasses on these soils used for forage production include improved bermudagrass and bahiagrass, which can be overseeded with legumes such as crimson clover or vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about three to four AUM of grazing and hay in a normal year.

**Pasture Management Group 10**

The Duffern (DuA) map unit is in this group.

These gently sloping to moderately sloping soils are on broad interstream divides on uplands. They are sandy throughout, and are excessively drained. These soils are moderately well suited to the production of grasses and legumes. Production is limited

**Figure 10.—A pasture in an area of Cuthbert and Redsprings soils, 5 to 15 percent slopes. These soils are in Pasture Management Group 9.**

because of the sandy surface layer allowing rapid movement of water and nutrients through the plant root zone. This results in low inherent fertility and limited water storage available for plant production. Also as slope increases above 10 percent, equipment use is impaired because of the loose sandy surface.

Adapted grasses on these soils used for forage production include weeping lovegrass and improved bermudagrass, which can be overseeded with legumes such as vetch. With proper management, including liming, fertilizing, and rotational grazing, improved bermudagrass will produce about three to four AUM of grazing and hay in a normal year.

### Pasture Management Group 11

The Ashford (AsA), Gallime-Guyton complex (GaC), Mollville (MIA), Mollville-Kildare complex (MkA), and Wrightsville (WrA) map units are in this group.

These nearly level soils are in depressions on broad mounded stream terraces. They have loamy and clayey surface layers, over loamy and clayey subsoils, are poorly drained, and may have water ponded on the surface during late winter and early spring.

These soils are poorly suited to the production of grasses and legumes. Production is limited because of severe wetness, water ponding on the surface, and poor internal soil drainage. The extreme wetness also interferes with establishment, maintenance, and harvesting of the forage produced.

Adapted grasses on these soils used for forage production include fescue and bahiagrass, which can be overseeded with legumes, such as white clover or vetch. With proper management, including liming, fertilizing, and rotational grazing, fescue or bahiagrass will produce about two AUM of grazing and hay in a normal year.

**Pasture Management Group 12**

The Gladewater (Gf), (Mantachie (Mf), and Sardis-Manco complex (Sm) map units are in this group.

These nearly level soils are on broad flood plains of large streams. They have loamy and clayey surface layers, over loamy and clayey subsoils, are somewhat poorly drained, and may be flooded annually.

These soils are poorly suited to the production of grasses and legumes. Production is limited because of severe wetness, water ponding on the surface, flooding, and poor internal soil drainage. The extreme wetness also interferes with establishment, maintenance, and harvesting of the forage produced.

Adapted grasses on these soils used for forage production include fescue and bahiagrass, which can be overseeded with legumes, such as white clover or vetch. With proper management, including liming, fertilizing, and rotational grazing, fescue or bahiagrass will produce about one to two AUM of grazing and hay in a normal year.

**Pasture Management Group 13**

The Kirvin (KiD), and Udorthents (Ud) map units are in this group.

These gently sloping to sloping soils are on broad interstream divides on uplands. The gravelly surface layer and the upper subsoil have been removed from these soils. The resulting surface is loamy to clayey with small piles of gravelly material left on the surface. These soils are well drained.

These soils are very poorly suited to the production of grasses and legumes. Production is decreased because of the exposed clayey subsoil, which limits water intake and storage for plant production. For a few years after the surface has been removed, it is difficult to establish pasture grasses because of droughty surface layer. Minor limitations of acidity and inadequate fertility are easily corrected with the additions of lime and fertilizer. The surface may have rills or small gullies, which will hamper harvesting.

Adapted grasses on these soils used for forage production include improved bermudagrass and bahiagrass, which can be overseeded with legumes, such as crimson clover or vetch. With proper management, including liming fertilizing, and rotational grazing, improved bermudagrass will produce about one AUM of grazing and hay in normal year. On some areas, it may be necessary to plant lovegrass until soil tilt is replaced.

**Not suited**

This group includes soils that in their natural state are not suited to pasture management. The Cuthbert and Redsprings (CrG) in map units are too steep to operate farm machinery in a safe manner. The Cypress (Cy), Bibb (Bg), and Socagee (So) soils in map units are too wet for pasture. Udorthents, gravelly, is not suited for this use.

## Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and

harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in Table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or Texas AgriLife Extension Service can provide information about the management and productivity of the soils for those crops.

## Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes. Capability classes are listed for each map unit in the section “Detailed Soil Map Units”.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (14).

*Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

*Capability subclasses* are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some

parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1, there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

*Capability units* are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

## Woodland and Forest Areas

**Ray Stoner, State Forester NRCS, helped to prepare this section**

Marion and Cass counties contain about 521,326 acres of woodland. The largest owner group is the nonindustrial, private landowner who owns 416,785 acres. Large industrial landowners, the U.S. Army Corps of Engineers, and state and local governments own the remaining 104,541 acreage of woodland. In addition to producing commercial wood products, recreational opportunities and important wildlife habitat are provided.

Timber products are a major source of income for the county (fig. 11). Lumber, pulpwood, crossties, pallet material, stakes, and crates are manufactured from the timber produced in the survey area. Several sawmills are located in the county. These include a large industrial pine lumber mill and a grade quality hardwood mill.

Plant habitats in Marion and Cass counties, range from droughty, sandy sites to frequently flooded bottomlands. The plant communities therefore range from shortleaf pines and sandjack oak types to willow oak, green ash and sweetgum types. The major forest management problem in the county is the harvesting of timber without adequate reforestation follow-up.

**Figure 11.—Curing logs at a sawmill. The timber industry is important to the economy of the survey area.**

## Woodland Productivity

The tables in this section can help woodland owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of woodland management.

In table 7, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet at http://www.nrcs.usda.gov.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

*Trees to manage* are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

## Woodland Management

In table 8, table 9, table 10, table 11, and table 12, interpretive ratings are given for various aspects of forest management. The ratings are both descriptive and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *hig*h. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet (http://soils.usda.gov/technical/nfmanual).

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant

limitations affect construction activities; *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil-rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope (fig. 12). Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

**Figure 12.—In areas of Cuthbert fine sandy loam, 5 to 15 percent slopes, the soil is highly erosive and soil-rutting is a severe hazard.**

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance; and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage (fig. 13). The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as *well suited*, *moderately suited*, or *poorly suited* to this use.

Ratings in the columns *suitability for hand planting* and suitability *for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

**Figure 13.—Water ponding in an area of Cypress clay loam, submerged. The ponding inhibits harvesting of timber on these sites.**

Ratings in the column suitability *for mechanical site preparation (surface*) are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

### Woodland Management Groups

The soils in Marion and Cass Counties that are suitable for wood crops have been placed in nineteen groups according to their suitability for woodland management (fig. 14). Each group is made up of soils with similar properties and that respond to similar management practices. The landscape position and chemical and physical properties of the soils were considered in assigning soils to each group.


**Figure 14.—A tree farm on Darco loamy fine sand, 2 to 5 percent slopes.**

**Woodland Management Group 1**

This group includes the Hannahatchee soils in map unit Hb. These loamy soils are on small flood plains and may be flooded for brief periods. They are suited to the production of both pine and hardwood trees. Common trees of the overstory are loblolly pine, green ash, sweetgum, white oak, water oak, and cherrybark oak. The site index for loblolly pine, sweetgum, and bottomland oaks averages 100 feet. The yield from an unmanaged natural stand of loblolly pine, over a 50-year period, is approximately 430 board feet per acre per year. The yield for sweetgum is approximately 310 board feet per acre per year. Although management can substantially increase these yields, it should also include attention to streamside management zone practices to protect water quality.

Harvesting or management operations may be temporarily interrupted because of brief periods of flooding, but this should cause no difficulty in long-range operations. Since areas of these soils may often be included in streamside management zones, road and trail construction should be limited.

**Woodland Management Group 2**

This group includes the Iulus and Mooreville soils in map units Iu and Mm. These loamy soils are on small flood plains. They have a high water table during the winter and spring months and may also be flooded for brief durations during the same periods. They are suited to the production of both pine and hardwood trees.

Common trees of the overstory are loblolly pine, water oak, cherrybark oak, white ash, and sweetgum. The site index for loblolly pine and sweetgum averages 100 feet, but can range from 95 to over 110 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 430 board feet per acre per year. The yield for sweetgum is approximately 310 board feet per acre per year. Although management can substantially increase these yields, it should also include attention to streamside management zone practices to protect water quality.

Flooding and a high water table may restrict access for periods during the winter and spring months. Modified equipment, such as tandem-axle and four-wheel drive vehicles, may be needed for much of the year. Control of invading brush and undesirable species may be needed in regeneration operations. Since areas of these soils may often be included in streamside management zones, road and trail construction should be limited.

**Woodland Management Group 3**

This group includes the Bibb and Socagee soils in map units Bg and So. They are on flood plains, and are saturated throughout the year. They are best suited to the production of hardwood trees.

Common trees of the overstory are green ash, black gum, sweet bay, sweetgum, water oak, cherrybark oak, and willow oak. The site index for sweetgum and bottomland oaks averages 100 feet. The yield from an unmanaged, natural stand of sweetgum, over a 50-year period, is approximately 310 board feet per acre per year. Although management can substantially increase this yield, it should also include attention to streamside management zone practices to protect water quality.

Equipment use is greatly restricted because of wetness. Management and harvesting operations should be done only during dry periods. Specialized equipment and harvesting methods are needed. Control of undesirable shade-tolerant species is necessary for successful regeneration efforts. Since areas of these soils may often be included in streamside management zones, road and trail construction should be limited.

**Woodland Management Group 4**

This group includes the Bernaldo, Erno, and Gallime soils in map units BaB, BaD, EtA, GaA, and GaC. These loamy soils are on stream terraces, and are suited to the production of both pine and hardwood trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, southern red oak, water oak, and white oak. The site index for loblolly pine averages 95 feet, but can range from 90 to over 100 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 380 board feet per acre per year. The yield for sweetgum is approximately 260 board feet per acre per year. Management can substantially increase these yields.

### Woodland Management Group 5

This group includes the Hainesville soils in map unit HaA. This sandy soil is on stream terraces and is best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, southern red oak, and white ash. The site index for loblolly pine averages 95 feet, but can range from 90 to 105 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 380 board feet per acre per year. Management can substantially increase this yield.

The coarse texture of these soils may cause severe problems with equipment use, especially during dry periods. Modified equipment, such as tandem-axle, four-wheel drive, and wide-tire vehicles, may be needed during dry periods. Successful establishment of planted pine requires attention to proper planting depth and soil compaction. Planting when the soil is moist should be helpful. Control of herbaceous weeds, either during site preparation or as a release during the first growing season, may also be needed.

### Woodland Management Group 6

This group includes the Eastwood, Kullit, Metcalf, and Thage soils in map units EeB, KuA, MiA, and EtA. They are on low uplands and broad, mounded terraces. They have a high water table during the winter months. These soils are suited to the production of both pine and hardwood trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, water oak, willow oak, southern red oak, and white oak. The site index for loblolly pine and sweetgum averages 95 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 380 board feet per acre per year. The yield for sweetgum is approximately 260 board feet per acre per year. Management can substantially increase these yields.

Some restriction of equipment use can be expected during the winter months because of a high water table. The abundant available moisture can lead to a competition problem for new pine seedlings. Site preparation or release that will control invading brush may be necessary. During road design and layout, attention should be given to avoid extremely flat or depressional areas and to not interrupt normal drainage. Maintenance will be necessary to fill ruts and holes. Since areas of these soils may often be included in streamside management zones, road and trail construction should be limited.

### Woodland Management Group 7

This group includes the Mantachie, Gladewater, Sardis, and Manco soils in map units Mf, Mm, Sm, and Gf. These loamy and clayey soils are on broad flood plains and may be flooded for brief to long periods during the winter and spring months. They are best suited to the production of hardwood trees.

Common trees of the overstory are willow oak, cherrybark oak, green ash, American elm, and sweetgum. The site index for sweetgum averages 95 feet. The yield from an unmanaged, natural stand of sweetgum, over a 50-year period, is approximately 260 board feet per acre per year. Although management can substantially increase this yield, it should also include attention to streamside management zone practices to protect water quality.

Wetness greatly restricts access for much of the year. Specialized equipment and harvesting techniques are needed. Control of undesirable, shade-tolerant species is necessary in regeneration efforts. Since areas of these soils may often be included in streamside management zones, road and trail construction should be limited.

**Woodland Management Group 8**

This group includes the Bowie, Elrose, Eylau, and Latex soils in map units BoC, ElA, EyB, and LtB. These loamy soils are on gently sloping to moderately sloping uplands. They are suited to the production of both pine and hardwood trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, southern red oak, water oak, and white oak. The site index for loblolly pine and sweetgum averages 90 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 330 board feet per acre per year. The yield for sweetgum is approximately 210 board feet per acre per year. Management can substantially increase these yields.

**Woodland Management Group 9**

This group includes the Briley, Lilbert, and Tenaha soils in map units BrB, LuC, and TnB. These sandy soils are on uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, post oak, white ash, sweetgum, and hickory. The site index for loblolly pine averages 90 feet, but can range from 80 to 95 feet depending on slope and slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 330 board feet per acre per year. Management can substantially increase this yield.

The coarse texture of these soils may cause equipment limitations, particularly during dry periods. Modified equipment, such as tandem-axle, four-wheel drive, or wide-tire vehicles may be needed. Little available moisture may cause seedling mortality to be significant in dry years. Successful establishment of planted pine requires attention to proper planting depth and soil compaction. Planting when the soil is moist should be helpful. Control of herbaceous weeds, either during site preparation or as a release during the first growing season may also be needed.

**Woodland Management Group 10**

This group includes the Alazan, Latch, and Rentzel soils in map units AaB, LcB, LmB, and RnB. These soils are either on broad terraces or toe slopes of upland sites and may be wet during the winter months because of a high water table. They are suited to the production of both pine and hardwood trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, water oak, willow oak, southern red oak, and white oak. The site index for loblolly pine and sweetgum averages 90 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 330 board feet per acre per year. The yield for sweetgum is approximately 210 board feet per acre per year. Although management can substantially increase these yields, it should also include attention to streamside management zone practices to protect water quality on these soils.

Restriction of equipment use can be expected during the winter months because of a high water table. The abundant available moisture can lead to a competition problem for new pine seedlings. Site preparation or release that will control invading brush may be necessary. During road design and layout, attention should be given to avoid extremely flat or depressional areas and to not interrupt normal drainage. Maintenance will be necessary to fill ruts and holes. Since areas of the Rentzel soils may often be included in streamside management zones, road and trail construction should be limited.

**Woodland Management Group 11**

This group includes the Sailes soils in map unit SlC. These loamy soils are on gently sloping to moderately sloping uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, southern red oak, sweetgum, and hickory. The site index for loblolly pine averages 85 feet, but can range from 80 to 90 feet. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 280 board feet per acre per year. Management can substantially increase this yield.

There are no significant management problems associated with these soils. On the steeper slopes, proper road design and layout that include the use of water-control devices, such as water bars and wing ditches should be adequate.

**Woodland Management Group 12**

This group includes the Kirvin and Sacul soils in map units KrC and SaC. These loamy soils are on gently sloping to moderately sloping uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, white ash, sweetgum, post oak, southern red oak, and white oak. The site index for loblolly pine averages 85 feet, but can vary significantly depending on slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 280 board feet per acre per year. Management can substantially increase this yield.

As slope increases, the potential for erosion increases. Intensive site preparation should be limited to gentler slopes, and machine tree planting should be done on the contour. Since clay occurs within 10 inches of the surface, particular attention must be given to tree planting methods that ensure proper root placement and soil compaction. In some cases, subsoiling before planting may be needed. The clayey subsoil may restrict equipment use during wet weather. During road design, consideration should be given to avoid the steeper slopes. If roads must be built on these slopes, long, uninterrupted grades should be avoided and adequate, water-control devices, such as water bars and dips, should be installed. On the steeper sites, sloughing may be a problem. Cuts and fills should be kept to a minimum, and shaped to as flat a slope as possible. When necessary, seeding problem areas, such as ditches and outlets, should be considered.

**Woodland Management Group 13**

This group includes the Tenaha soils in map unit TnD. These sandy soils are on uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, post oak, southern red oak, and white oak. The site index for loblolly pine averages 85 feet, but can vary depending on slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 280 board feet per acre per year. Management can substantially increase this yield.

Generally, these soils are not very erosive. However, uphill and downhill rutting should be avoided, particularly on the steeper slopes. The coarse texture of these soils may restrict equipment use, particularly during dry periods. Modified equipment, such as tandem-axle, wide-tire, or four-wheel drive vehicles, may be needed, especially during the dry periods. The moderate available water capacity of these soils may result in significant seedling mortality during dry years. Successful establishment of planted pine requires attention to proper planting depth and soil compaction. Planting when the soil is moist should be helpful. Control of herbaceous weeds, either during site preparation or as a release during the first growing season, may also be necessary. As slopes increase, the need for proper road design, including the installation of water-control devices, such as water bars, becomes more important. Wing ditches should be used as often as possible, but released only onto stable outlets. If roads must be built on the steeper

slopes, long uninterrupted grades should be avoided. Revegetating disturbed areas may be needed on the steeper slopes.

**Woodland Management Group 14**

This group includes the Duffern and Darco soils in map units DuA, DaB, and DaE. These sandy soils are on uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, post oak, and hickory. The site index for loblolly pine averages 85 feet, but can range from 80 to 90 feet depending on slope and slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 280 board feet per acre per year. Management can substantially increase this yield.

Generally, these soils are not very erosive. Machine planting should be done on the contour on the steeper slopes. The coarse texture of these soils may restrict equipment use during dry periods. Modified equipment, such as tandem-axle, four-wheel drive, and wide-tire vehicles, may be needed. Seedling mortality may be significant because of the low available water capacity of these soils. Successful establishment of planted pine requires attention to proper planting depth and soil compaction. Planting when the soil is moist should be helpful. Control of herbaceous weeds, either during site preparation or as a release during the first growing season, may also be needed. Some replanting may be necessary, especially following a particularly dry year. As slopes increase, the need for proper road design and construction becomes more important. Long, uninterrupted grades should be avoided, and water-control devices should be installed. Wing ditches should be used as often as possible, but released only onto stable outlets. Revegetating potential problem areas should be considered.

**Woodland Management Group 15**

This group includes the Cuthbert and Eastwood soils in map units CtE and EeD. These loamy soils are on rolling uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, sweetgum, hickory, post oak, southern red oak, and white oak. The site index for loblolly pine averages 80 feet, but can range from 75 to 85 feet depending on slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 230 board feet per acre per year. Management can substantially increase this yield.

As slopes increase, the potential for erosion increases. Uphill and downhill rutting should be avoided during harvesting. Intensive site preparation should be restricted to the flatter slopes and machine planted on the contour. The clayey subsoil may restrict equipment use during wet periods. Modified equipment, such as four-wheel drive vehicles, may be needed. Rutting should be avoided on the flatter slopes, and temporary restrictions may be needed during wet weather. The clayey subsoil may also cause problems in tree planting. Attention to planting methods is important to ensure proper root placement and soil compaction. Subsoiling before machine planting may also improve seedling survival. As slopes increase, proper road design and construction, including the installation of water-control devices, such as water bars, dips, and wing ditches, becomes more important. Long, uninterrupted grades should be avoided. On the steeper sites, sloughing may be a problem. Cuts and fills should be kept to a minimum and shaped to as flat a slope as possible. Revegetating potential problem areas should be considered.

**Woodland Management Group 16**

This group includes the Cuthbert, Kirvin, and Redsprings soils in map units CrF, CtE, CuE, KiC, and RgC. These gravelly soils are on rolling uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, hickory, sweetgum, post oak, southern red oak, and white oak. The site index for loblolly pine averages 80

feet, but can range from 75 to 90 feet depending on slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 230 board feet per acre per year. Management can substantially increase this yield.

As slopes increase, the potential for erosion also increases, particularly when the soil surface is disturbed. Management practices that will cause as little disturbance as possible should be chosen for sites with steeper slopes. On such sites, less intensive site preparation and regeneration methods, such as roller chopping, burning, or underplanting, and deadening, should be considered. Intensive site preparation should be restricted to the flatter slopes. Also, harvesting methods should be modified on the steeper slopes to prevent excessive erosion. Uphill and downhill rutting should be avoided. The clayey subsoil may restrict equipment use, especially during wet periods. Modified equipment, such as four-wheel drive vehicles, may be needed. Attention to planting methods is important to ensure proper root placement and soil compaction. Subsoiling on the flatter slopes prior to machine planting may be helpful in getting the proper planting depth. Proper road design and construction becomes important as the slopes increase. Water-control devices, such as water bars, dips, and wing ditches, must be installed on the steeper slopes. Long, uninterrupted grades should be avoided. Seeding problem areas, such as ditches and ditch outlets, as well as other disturbed areas, may be needed.

**Woodland Management Group 17**

This group includes the Ashford, Guyton, Mollville, and Wrightsville soils in map units AsA, GaC, MlA, MkA, LmB, and WrA. These loamy and clayey soils are on nearly level terraces and may also be in depressional areas. They may be saturated during the winter months, and are suited to the production of both pine and hardwood trees.

Common trees of the overstory are loblolly pine, water oak, willow oak, sweetgum, and green ash. The site index for loblolly pine, water oak, and sweetgum averages 80 feet. The yield from an unmanaged, natural stand of loblolly pine over a 50-year period, is approximately 230 board feet per acre per year. The yield for sweetgum is approximately 120 board feet per acre per year. Management can substantially increase these yields.

Wetness during much of the year may greatly restrict the use of equipment. Harvesting should be planned during drier periods, and modified equipment, such as tandem-axle, wide-tire, and four-wheel drive vehicles, may be needed most of the time. Mortality of pine seedlings may be significant, especially during wet years. Planting during the drier part of the planting season should be planned. In addition, bedding or mounding may be beneficial. Competition to desirable seedlings from herbaceous and woody plants may be severe. Site preparation and release practices that will control this competition may be needed. These soils should be avoided whenever possible during road planning and construction. If road construction is necessary, crowning and raising the roadbed will be necessary.

**Woodland Management Group 18**

This group includes the Cuthbert and Redsprings soils in map unit CrG. They are on steep uplands, and are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, hickory, post oak, southern red oak, and white oak. The site index for loblolly pine averages 75 feet, but can vary depending on slope position. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 180 board feet per acre per year. Management can substantially increase this yield.

The stony surface and steep slopes of these soils may severely limit equipment use and increase the potential for erosion. Harvesting methods need to be adjusted to limit the use of equipment as much as possible. Skidding should either be restricted to selected trails or done on as gentle an uphill grade as possible. Cabling should be considered. Traffic should be excluded or restricted during wet periods. Site preparation

and tree planting operations should cause a minimum of disturbance to the site. Underplanting or hand planting followed by release should be considered. Attention to planting methods is important to ensure proper root placement and soil compaction. Planting can also be hindered by the presence of rocks on the surface. Hand planting may be the only way to ensure proper seedling placement in many situations. Because the slopes on these soils exceed the recommended maximum grade for roads and the rocks can make road construction excessively expensive, construction should be avoided whenever possible. If this is not possible, adequate water-control devices, including water bars and wing ditches, must be installed. Seeding of the road surface may be necessary, but seeding of ditches and outlets, as well as other problem and disturbed areas, should be planned.

**Woodland Management Group 19**

This group includes the Kirvin and Udorthents in map units KiD and Ud. These soils are on uplands, and the surface layer has been removed for gravel. They are best suited to the production of pine trees.

Common trees of the overstory are loblolly pine, shortleaf pine, post oak, southern red oak, and hickory. The site index for loblolly pine averages 65 feet, but can vary depending on the amount of site disturbance. The yield from an unmanaged, natural stand of loblolly pine, over a 50-year period, is approximately 95 board feet per acre per year.

The lack of a surface layer and the clayey texture of these soils cause all phases of management to have special concerns. Stabilizing these soils against erosion will often be needed because of sparse vegetation. Seeding may be needed. Since clay may occur at the surface, attention to tree planting methods is important. Subsoiling prior to planting may be required, and attention must be given to root placement and soil compaction. Harvesting methods that will minimize soil disturbance should be planned. The use of equipment may be restricted during wet periods. Roads built on these soils may require adequate water-control devices, such as water bars, dips, and wing ditches, installed.

**Not suited to Woodland Management**

This group includes the Cypress and Kildare soils in map units Cy and MkA.

## Recreation

**Charles Snowden, District Conservation NRCS, helped to prepare this section**

Marion and Cass Counties has the wildlife, water areas and beauty that is characteristic of the pineywoods. Approximately 90 percent of the area is used for recreational activities, including camping, swimming, boating, hunting fishing, bird watching, picnicking, hiking, and sightseeing. The area also provides opportunity for photography. There are many vacation areas with facilities such as cabins, cottages, and youth camps.

Wright Patman Lake, Lake O' the Pines, Caddo Lake, and Johnson Creek Reservoir as well as the Sulfur River, and numerous creeks, bayous, and other small impoundments provide opportunity for recreation (fig. 15). The spring and the fall offer an opportunity for the photographer as well as the other sightseeing tourist a kaleidoscope of colors from the blooming of spring flowers or the turning of the fall leaves. Hunting is also available on most of the lakes.

**Figure 15.—Recreation on the waterways, lakes, and ponds in Marion and Cass Counties provide income for landowners and business owners.**

The soils of the survey area are rated in table 13 and table 14 according to limitations that affect their suitability for recreation. The ratings are both descriptive and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in table 13 and table 14 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

*Camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Picnic areas* are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Playgrounds* require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Paths and trails* for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

*Off-road motorcycle trails* require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a seasonal high water table, ponding, flooding, and texture of the surface layer.

*Golf course fairways* are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

## Wildlife

**Charles Snowden, District Conservationist, NRCS, helped to prepare this section**

Marion and Cass Counties have valuable fish and wildlife resources. Streams and lakes of all sizes provide excellent habitat for fish. The forested areas and the interspersed open areas provide wildlife habitat throughout the counties.

Many of the soils in Marion and Cass Counties are suitable for water impoundments. Ponds, small lakes and large impoundments are stocked and managed for largemouth bass, channel catfish, crappie, bluegill, and redear sunfish. Other species that inhabit streams and public impoundments include freshwater drum, flathead catfish, bullhead catfish, carp, gar, grass pickerel bowfin, buffalo, white bass, gizzard shad, green sunfish, and various other sunfish. Many of these species find their way into unmanaged ponds and lakes. Many small ponds, both new and renovated, are stocked with channel catfish.

Black Cypress Bayou, Black Bayou, Jims Bayou, Flat Creek, Big and Little Cypress Bayou, and Frazier Creek are major streams flowing through the counties. The Northern boundary of Cass County is the Sulfur River, which is the water source for Wright Patman Lake. Lake O’ the Pines constructed on Big Cypress Creek and Caddo Lake in Marion County whose main water source is Big and Little Cypress Creeks and Johnson Creek Reservoir are the major bodies of water in the survey area. Caddo Lake is on the southeastern boundary of Marion County and it borders with Harrison County. It is also known as the only natural lake in Texas.

The major game species in the counties include whitetail deer, fox squirrel, gray squirrel, and waterfowl. The counties have a limited population of bobwhite quail and mourning dove. Eastern wild turkey is being reintroduced into the county. Raccoon, flying squirrel, opossum, striped skunk, armadillo, cottontail rabbit, swamp rabbit, and numerous other rodents and songbirds also inhabit the counties. The most common predators are coyote, gray fox, bobcat, beaver, nutria, mink, and river otter.

Several species of reptiles and amphibians inhabit both counties. The best known of these are the cottonmouth, southern copperhead, northern copperhead, coral snake, timber rattlesnake, canebrake rattlesnake, water snake, green bullfrog, tree frog, snapping turtle, and numerous other turtles and alligators.

Wood ducks are permanent residents of the counties. Coots, cormorant, and water turkey are in some areas. During migration periods, waterfowl, such as teals, northern mallards and pintail, gadwall, widgeon, spoonbill, ring-necked, and canvasback ducks, use the existing water areas for resting, feeding, and roosting. Many songbirds, raptors, vultures, and shore birds migrate to the counties. Bald eagles are occasionally observed around large impoundments.

The areas of pine and hardwoods have the best potential for improvement of wildlife habitat. Good management practices include maintaining natural stands that provide a highly diverse habitat, designing timber stands so that they provide the most edge per acre, retaining hardwoods along the drainageways, harvesting timber selectively so that the stands include trees of all ages, burning, and thinning pine plantations and regenerating pine by moderate site preparation that prevents severe loss of habitat diversity.

The rolling part of the county has a mixture of loblolly pine, shortleaf pine, sweetgum, post oak, and southern red oak. Other plants are white oak, beech, flowering dogwood, yaupon, greenbrier, American beautyberry, tickclover, and little bluestem. This habitat supports a good population of whitetail deer and fox squirrel. Good timber management and development of supplemental food plots have improved the habitat for deer. Eastern wild turkey was stocked in the early eighties. The number of quail and mourning dove is adequate for brood stock to populate areas of suitable habitat.

Water oak and willow oak and black gum are the major trees on the flood plains of the river and creeks in the counties. Associated plants include various oaks, elm, sweetgum, hawthorn, supplejack, river birch, and water elm. Aquatic animals, squirrel, deer, various, birds, reptiles, and amphibians inhabit this area.

Most wildlife habitat is created or managed by establishing, or manipulating the vegetation required by the desirable game species. Conservation practices should be applied on the basis of the habitat needs of desirable wildlife. Many of these practices can be detrimental rather than beneficial if they are arbitrarily applied. Managing for game species generally improves the habitat for many non-game species.

The wetlands in the counties support mainly willow oaks, water oak, blackgum, baldcypress, or water tupelo. They are in areas of small and large water impoundments. The most common soils on the flood plains are those of the Bibb, Gladewater, Iulus, Mantachie, Mooreville, Socagee, Manco, and Sardis series. Wet soils on the terraces include those of the, Guyton, Mollville, Kildare, Wrightsville, and Ashford. The soils on the flood plains and terraces are among the most productive soils for wildlife. The flood plain and water areas that include sloughs and oxbows provide wintering habitat for waterfowl, such as wood ducks, mallards, teals, and pintail. The shallow water areas provide important brood-rearing habitat for wood ducks. Open bodies of water make up bulk the bulk of the remaining wetlands in the counties. They provide resting and feeding areas for migrating waterfowl and shorebirds. They also provide good habitat for furbearers, and alligators (fig. 16).

Some endangered or threatened species inhabit or may inhabit Marion and Cass Counties. Red cockaded woodpecker colonies are in the areas of pines and hardwoods. Arctic peregrine falcon, osprey, wood stork, tail kite, northern bald eagle, and southern bald eagle migrate through the country each fall and spring. They are evident in areas around Caddo Lake, Lake O' the Pines, Wright Patman Lake, and the Sulfur River. Bald eagles winter in the counties. The ivory-billed woodpecker also inhabits the counties. The American alligator is common in the counties.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

## Wildlife Habitat

In table 15, table 16, table 17, table 18, table 19, and table 20, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated *not limited, somewhat limited*, or *very limited*. A rating of *not limited* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *somewhat limited* indicates that the element or kind of habitat can be established, improved, or maintained in most places, but limitations of a habitat can be severe for a designated element or kind of habitat. Moderately intensive to intensive management is required for satisfactory results in most places, and management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

**Figure 16.—A beaver dam built in an area of Bibb soils, frequently flooded.**

The elements of wildlife habitat are described in the following paragraphs.

*Grain and seed crops* are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, and oats.

*Grasses and legumes* are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses are lovegrass, bahiagrass, and legumes clover, and vetch.

*Habitat for burrowing mammals and reptiles* indicate the limitation of the soil for maintaining or increasing local populations of specific burrowing animals. The soil properties and features that affect the preservation of these species are flooding, ponding, depth to bedrock or a cemented pan, depth to a high water table, sandy layers, clayey layers, a high content of organic matter, and high concentrations of rock fragments. Examples of burrowing mammals and reptiles are rabbits, skunks, armadillos, alligators, and rattlesnakes.

*Upland native herbaceous plants* are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of shrubs are American beautyberry, yaupon, sumac, and greenbrier.

*Upland shrubs and vines* indicate the limitation of the soils as a growing medium for diverse upland shrub and vine community. This community is adapted to soils that are drier than those common in the moist riparian and wetland zones, but that are not as dry as those in upland desert areas. The soil properties and features that affect the ability of these species to thrive include soil texture, content of organic matter, available water capacity, depth to bedrock or a cemented pan, the presence of excess salts in the soil, soil moisture and temperature regimes, depth to a high water table, and rock fragments on the soil surface. Examples of upland shrubs and vines are yaupon, farkleberry, hawthorne, greenbriar, poison ivy, jasmine, Virginia creeper, trumpet creeper, and grape.

*Upland deciduous trees* indicate the limitation of the soils as a growth medium for a diverse upland deciduous tree community that meets specific local habitat requirements for targeted and nontargeted wildlife species. Typically, deciduous trees require better soil conditions than geographically related conifers. The soil properties and features that affect the ability of upland deciduous trees to thrive include available water capacity, depth to a high water table, depth to bedrock or a cemented pan, and soil moisture and temperature regimes. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated good are Russian-olive, autumn-olive, and crabapple.

*Upland coniferous trees* indicate the limitation of the soils as a growth medium for a diverse upland coniferous tree community that meets specific local habitat requirements for targeted and nontargeted wildlife species. Typically, coniferous trees can subsist under harsher soil conditions than geographically related hardwoods. The soil properties and features that affect the ability of upland coniferous trees to thrive include available water capacity, depth to a high water table, depth to bedrock or a cemented pan, and soil moisture and temperature regimes. Examples of coniferous plants are pine, and eastern red cedar.

*Upland mixed deciduous-coniferous trees* indicate the limitation of the soils as a growth medium for a diverse upland deciduous-coniferous tree community that meets specific local habitat requirements for targeted and nontargeted wildlife species. A mixed deciduous-coniferous forest can subsist under a wide variety of soil conditions. Typically, better soil conditions are required to maintain the deciduous species, but many of these species adapt to harsher conditions. The soil properties and features that affect the ability of the deciduous and coniferous trees to thrive include available water capacity, depth to a high water table and its seasonal duration, depth to bedrock or a cemented pan, and soil moisture and temperature regimes.

*Riparian herbaceous plants* indicate the limitation of the soils as a growth medium for herbaceous plants that are adapted to soil conditions that are wetter than those common in the drier upland areas. The soils suitable for this habitat generally are on flood plains, in depressions, on bottomland, in drainageways adjacent to streams, or in any other area where the soil either is saturated for some period during the year or is subject to periodic overflow from ponding or flooding. The soil properties and features that affect the ability of riparian herbaceous plants to persist include soil texture, content of organic matter, depth to a high water table, the frequency and duration of ponding and flooding, the presence of excess salts in the soil, rock fragments, and the soil temperature regime. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, croton, and partridge pea.

*Riparian shrubs, vines, and trees* indicate the limitation of the soils as a growth medium for shrubs, vines, and trees that are adapted to soil conditions that are wetter than those common in the drier upland areas. The soils suitable for this habitat generally are on flood plains, in depressions, on bottomland, in drainageways adjacent to streams, in areas of springs and seeps, or in any other area where the soil either is saturated for some period during the year or is subject to periodic overflow from ponding or flooding. The soil properties and features that affect the ability of riparian shrubs, vines, and trees

to persist include available water capacity, depth to a high water table, the frequency and duration of ponding and flooding, the presence of excess salts in the soil, and the soil temperature regime. Examples are cottonwood and willow.

*Freshwater wetland plants* indicate the limitation of the soils as a growth medium for plants that are adapted to wet soil conditions. The soils suitable for this habitat generally are in marshes, in depressions, on bottomland, in backwater areas on flood plains, in drainageways adjacent to streams, in areas of springs and seeps, or in any other area where the soil is not directly affected by moving floodwater but may be ponded during some part of the year. The soil properties and features that affect the ability of freshwater wetland plants to persist include soil texture, content of organic matter, depth to a high water table, the frequency and duration of ponding, the presence of excess salts in the soil, and soil reaction (pH). Examples of shallow water areas are marshes, waterfowl feeding areas, and beaver ponds.

## Hydric Soils

In this section, hydric soils are defined and described.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (3,7,11,12). Criteria for each of the characteristics must be met for areas to be identified as wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (4). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (5). The criteria are used to identify a phase of a soil series that normally is also a hydric soil. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (10) and "Keys to Soil Taxonomy" (9) and in the "Soil Survey Manual" (8).

If soils are wet enough for a long enough period to be considered hydric, they generally exhibit certain properties that can be observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (6).

For information regarding hydric soils, refer to the USDA Natural Resources Conservation Service Soil Data Mart at http://soildatamart.nrcs.usda.gov.

## Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

*Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because*

*of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

*The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.*

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

## Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 21 and table 22 shows the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

*Lawns and landscaping* require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches—the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

## Sanitary Facilities

Table 23 and table 24 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both descriptive and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in down slope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact, and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

*Daily cover for landfill* is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit

revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

## Construction Materials

Table 25 and table 26 provide information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good, fair*, or *poor* as potential sources of sand and gravel. A rating of good or fair means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

*Sand* and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 25, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair*, or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low

embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

## Water Management

Table 27 provides information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both descriptive and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

# Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include physical and chemical properties, and clay mineralogy.

## Engineering Properties

Table 28 provides the engineering classifications and the range of properties for the layers of each soil in the survey area.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters across. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

*Classification* of the soils is determined according to the Unified soil classification system (2) and the system adopted by the American Association of State Highway and Transportation Officials (1).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches across and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches across is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection. If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Rock fragments* larger than 10 inches across and 3 to 10 inches across are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches across based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

## Physical Soil Properties

Table 29 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle-size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle-sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle-size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar or 1/10 bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Permeability (*K-sat*)* refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K-sat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that

affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Linear extensibility* refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3 bar or 1/10 bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In table 29, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue of the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

*Erosion factors* are shown in table 29 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor Kw* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor Kf* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

## Chemical Soil Properties

Table 30 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Soil reaction* is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate* equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

*Salinity* is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter (mmhos/cm) or decisiemens per meter (dS/m) at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

*Sodium adsorption ratio* (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

## Soil Features

Table 31 provides estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restricts roots or otherwise provides an unfavorable root

environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

## Water Features

Table 32 provides estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

*Water table* refers to a saturated zone in the soil. Table 32 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely gray colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 32 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Physical, Chemical, and Clay Mineralogy Analyses of Selected Soils

The results of physical analysis of several typical pedons in the survey area are given in table 33, the results of chemical analysis in table 34, and the results of clay mineralogy analysis in table 35. The data are for soils sampled at carefully selected sites. Unless otherwise indicated, the pedons are typical of the series. They are described in the section "Soil Series and Their Morphology." Soil samples were analyzed by National Soil Survey Laboratory, Lincoln, Nebraska, and the Soil Characterization Laboratory, Texas A&M University at College Station, Texas.

*Depth* to the upper and lower boundaries of each layer is indicated.

Most determinations, except those for grain-size analysis and bulk density, were made on soil material smaller than 2 millimeters across. Measurements reported as percent or quantity of unit weight was calculated on an ovendry basis. The methods used in obtaining the data are indicated in the list that follows. The codes in parentheses refer to published methods (13).

*Sand*—(0.05- to 2.0-millimeter fraction) weight percentages of material less than 2 millimeters (3A1).

*Silt*—(0.002- to 0.05-millimeter fraction) pipette extraction, weight percentages of all material less than 2 millimeters (3A1).
*Clay*—(fraction less than 0.002 millimeter) pipette extraction, weight percentages of material less than 2 millimeters (3A1).
*Coefficient of linear extensibility*—change in clod dimension based on whole soil (3D4).
*Bulk density* of less than 2-millimeter material, saran-coated clods field moist (3B1a), 1/3 bar (3B1b), ovendry (3B1c).
*Water retained*—pressure extraction, percentage of ovendry weight of less than 2-millimeter material; 1/3 bar (3C1), 15 bars (3C2).
*Organic carbon*—wet combustion. Walkley-Black modified acid-dichromate, ferric sulfate titration (6A1c, obsolete).
*Reaction (pH)*—1:1 water dilution (4C1a2a1).
*Extractable cations*—ammonium acetate pH 7.0, ICP; calcium (6N2e, 6N2f), magnesium (6O2d, 6O2e), sodium (6P2b, 6P2c), potassium (6Q2b, 6Q2c).
*Cation exchange capacity*—sum of cations (4B4b1).
*Base saturation*—ammonium acetate, pH 7.0 (4B4c1).
*Aluminum*—potassium chloride extraction (6G9c).
*Sesquioxides*—dithionate-citrate extract; iron (6C2b), manganese (6D3b).
*X-Ray diffraction, clay mineralogy*—(7A1).

# Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (9,10). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 36 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in sol. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis, and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus ult, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus udult, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, semiactive, thermic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

## Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil that is typical of the series in the survey area is described. Some of the typifying pedons described below are not exclusively located within the boundaries of Marion and Cass Counties, but are typical pedons for the series in the MLRA survey area, of which Marion and Cass Counties is located. The detailed description of each soil horizon follows standards in the "Soil

Survey Manual" (8). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (10) and in "Keys to Soil Taxonomy" (9). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

## Alazan Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Moderately well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bowie soils have 5 percent plinthite, and occur on higher positions.
- Lilbert soils have sandy surfaces, and occur on higher positions.
- Tenaha soils have sandy surfaces, and occur on side slopes.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Aquic Glossudalfs

### *Typical Pedon*

Alazan fine sandy loam in an area of Alazan fine sandy loam, 0 to 2 percent slopes, in intermixed conifers and hardwoods; located from the intersection of U.S. Highway 59 and Farm Market 125 in Linden; 4.2 miles southeast on Farm Market 125; 1.4 miles northeast on County Road 1898; and 170 feet northwest in woods. Lanier, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 58 minutes, 45.09 seconds N., and Longitude—94 degrees, 16 minutes, 44.32 seconds W.

A—0 to 3 inches; brown (10YR 4/3), fine sandy loam; weak medium subangular blocky structure; very friable, soft; common fine, common medium, and few coarse roots; strongly acid; clear wavy boundary.

E—3 to 12 inches; yellowish brown (10YR 5/4), fine sandy loam; weak medium subangular blocky structure; very friable, soft; few fine, few medium, and few coarse roots; few fine and few medium pores; very strongly acid; gradual wavy boundary.

Bt1—12 to 20 inches; brownish yellow (10YR 6/6), loam; moderate medium subangular blocky structure; friable, slightly hard; few medium and few coarse roots; few faint clay films; 5 percent medium distinct light brownish gray (10YR 6/2) clay depletions; 1 percent medium faint yellowish brown (10YR 5/4) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bt2—20 to 26 inches; yellowish brown (10YR 5/6), clay loam; moderate medium subangular blocky structure; firm, moderately hard; few medium roots; few faint clay films; 5 percent medium distinct light brownish gray (10YR 6/2) clay depletions; 5 percent medium distinct yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bt/E1—26 to 36 inches; yellowish brown (10YR 5/6), clay loam; moderate medium subangular blocky structure; firm, moderately hard; few medium roots; 5 percent by volume albic material (E); few faint clay films; 5 percent light brownish gray (10YR 6/2) clay depletions; 5 percent medium distinct yellowish red (5YR 5/6) masses of oxidized iron;1 percent medium prominent red (2.5YR 4/6) masses of oxidized iron; very strongly acid; gradual irregular boundary.

Bt/E2—36 to 47 inches; brownish yellow (10YR 6/6), clay loam; moderate medium subangular blocky structure; firm, moderately hard; few fine roots; 15 percent by volume albic material (E); common faint clay films; 15 percent light brownish gray (10YR 6/2) clay depletions; 5 percent coarse distinct strong brown (7.5YR 5/8), 5 percent coarse distinct yellowish red (5YR 5/8), 5 percent medium distinct yellowish red (5YR 5/8), 5 percent medium distinct strong brown (7.5YR 5/6), and 1 percent fine prominent red (2.5YR 4/6) masses of oxidized iron; very strongly acid; gradual irregular boundary.

Bt/E3—47 to 52 inches; yellowish brown (10YR 5/6), clay loam; moderate medium subangular blocky structure; very firm, moderately hard; 35 percent by volume albic material (E); common faint clay films; 35 percent light brownish gray (10YR 6/2) clay depletions; 5 percent medium distinct yellowish red (5YR 5/8), 5 percent fine distinct yellowish red (5YR 5/8), 1 percent medium faint strong brown (7.5YR 5/6), and 1 percent fine faint strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual irregular boundary.

Bt/E4—52 to 60 inches; yellowish brown (10YR 5/6), clay loam; weak fine subangular blocky structure; friable, slightly hard; 40 percent by volume albic material (E); common faint clay films; 40 percent light brownish gray (10YR 6/2) clay depletions; 5 percent medium distinct strong brown (7.5YR 5/6), and 5 percent medium faint yellowish brown (10YR 5/8) masses of oxidized iron; very strongly acid; gradual irregular boundary.

Bt/E5—60 to 75 inches; yellowish brown (10YR 5/6), clay loam; weak medium subangular blocky structure; friable, slightly hard; 45 percent by volume albic material (E); common faint clay films; 45 percent light brownish gray (10YR 6/2) clay depletions; 5 percent medium distinct yellowish red (5YR 5/8), 1 percent medium prominent dark reddish brown (2.5YR 3/3), and 1 percent fine faint dark yellowish brown (10YR 3/4) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Btg/E—75 to 80 inches; light brownish gray (10YR 6/2), clay loam; weak fine subangular blocky structure; friable, slightly hard; 10 percent by volume albic material (E); common faint clay films; 10 percent light brownish gray (10YR 6/2) clay depletions; 5 percent medium distinct yellowish brown (10YR 5/6), and 1 percent fine prominent yellowish red (5YR 5/8) masses of oxidized iron; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 18 to 25 percent
*Other features:* Silt content in the particle-size control section ranges from 25 to 45 percent

**A horizon**

*Hue:* 10YR
*Value:* 3 to 5
*Chroma:* 1 to 3
*Texture:* Fine sandy loam
*Other features:* None to few quartzite pebbles are in some pedons
*Reaction:* Very strongly acid to moderately acid

**E horizon**

*Hue:* 10YR
*Value:* 5 to 7
*Chroma:* 2 to 4
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from none to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to common
*Texture:* Fine sandy loam
*Other features:* None to few quartzite pebbles are in some pedons
*Reaction:* Very strongly acid or strongly acid

**Bt horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Loam or clay loam
*Reaction:* Very strongly acid or strongly acid

**Bt/E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Bt—loam or clay loam; E part—fine sandy loam or sandy loam
*Other features:* Intrusions of albic materials (E part) make up 5 to 50 percent of the horizon; however, the glossic horizon (with more than 15 percent albic material) is more than 20 inches thick. In most pedons; 5 to 20 percent of the matrix is brittle
*Reaction:* Very strongly acid to slightly acid

**Btg/E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 2
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from common to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from common to many
*Texture:* Bt part—loam or clay loam; E part—fine sandy loam, sandy loam, or loam
*Other features:* Intrusions of albic materials (E part) make up 5 to 50 percent of the horizon
*Reaction:* Very strongly acid to slightly acid

## Ashford Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression

*Parent material*: Clayey alluvium derived from sedimentary rock
*Drainage class:* Poorly drained
*Permeability* class*:* Very slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Very high
*Slope*: 0 to 1 percent

### *Associated Soils*

- Eastwood soils have vertic subgroups, and are redder.
- Latex soils are fine-loamy.

### *Taxonomic Classification*

Very-fine, smectitic, thermic Chromic Dystraquerts

### *Typical Pedon*

Ashford clay in an area of Asford clay, 0 to 1 percent slopes, ponded, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 8 and Texas Highway 77 in Douglassville; 0.8 mile north on Texas 8; 1.4 miles northeast on County Road 2121; 0.2 mile east on County Road 2116; 2.1 miles north on County Road 2124; and 30 feet west in woods. Douglassville, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 14 minutes, 15.30 seconds N., and Longitude—94 degrees, 18 minutes, 54.50 seconds W.

Ag—0 to 3 inches; gray (10YR 6/1), clay; strong fine angular blocky structure parting to strong fine granular; firm, hard, very sticky, very plastic; many very fine, fine, and medium roots; many very fine moderate continuity tubular pores; 10 percent distinct faint black (10YR 2/1) stains; 45 percent medium prominent yellowish red (5YR 5/8), 45 percent fine prominent yellowish red (5YR 5/8), 5 percent medium distinct brownish yellow (10YR 6/8), and 5 percent fine distinct brownish yellow (10YR 6/8) masses of oxidized iron; extremely acid; clear smooth boundary.

Bg—3 to 17 inches; 60 percent gray (10YR 6/1), 35 percent yellowish brown (10YR 5/8), and 5 percent yellowish red (5YR 4/6), clay; strong coarse angular blocky structure parting to strong fine and medium angular blocky; very firm, extremely hard, very sticky, very plastic; many very fine, fine, medium, and common coarse roots between peds; many very fine moderate continuity tubular pores; 2 percent distinct black (10YR 2/1) stains in root channels and/or pores; 30 percent faint pressure faces on faces of peds; 3 percent fine spherical black (10YR 2/1) iron-manganese concretions between peds; extremely acid; clear wavy boundary.

Bgss1—17 to 26 inches; gray (10YR 5/1), clay; strong coarse prismatic structure parting to strong medium angular blocky; very firm, extremely hard, very sticky, very plastic; many very fine, fine, medium, and common coarse roots between peds; many very fine moderate continuity tubular pores; 5 percent distinct black (10YR 2/1) manganese or iron-manganese stains in root channels and/or pores; 10 percent faint slickensides (pedogenic); 25 percent faint pressure faces on faces of peds; 25 percent coarse distinct yellowish brown (10YR 5/8) masses of oxidized iron, 25 percent medium distinct yellowish brown (10YR 5/8), 5 percent medium prominent yellowish red (5YR 5/6), and 5 percent fine prominent yellowish red (5YR 5/6) masses of oxidized iron throughout; 1 percent fine spherical black (10YR 2/1) iron-manganese concretions between peds; extremely acid; gradual wavy boundary.

Bgss2—26 to 36 inches; gray (10YR 5/1), clay; strong coarse prismatic structure parting to strong medium angular blocky; very firm, extremely hard, very sticky, very plastic; many very fine, fine, and common medium roots between peds; common very fine moderate continuity tubular pores; 5 percent distinct black (10YR 2/1) manganese or iron-manganese stains in root channels and/or pores; 15 percent faint slickensides (pedogenic); 20 percent faint pressure faces on

faces of peds; 15 percent coarse distinct brownish yellow (10YR 6/6), 15 percent medium distinct brownish yellow (10YR 6/6), 5 percent medium prominent red (2.5YR 5/6), 5 percent fine prominent red (2.5YR 5/6) masses of oxidized iron throughout; 1 percent fine spherical black (10YR 2/1) iron-manganese concretions between peds; extremely acid; gradual wavy boundary.

Bgss3—36 to 58 inches; gray (10YR 5/1), clay; strong coarse prismatic structure parting to strong medium angular blocky; very firm, extremely hard, very sticky, very plastic; many very fine, fine, and common medium roots between peds; common very fine moderate continuity tubular pores; 25 percent faint slickensides (pedogenic); 8 percent medium distinct brownish yellow (10YR 6/6), 8 percent fine distinct brownish yellow (10YR 6/6), 2 percent medium prominent red (2.5YR 4/6), and 2 percent fine prominent red (2.5YR 4/6) masses of oxidized iron throughout; extremely acid; gradual wavy boundary.

Bgss4—58 to 75 inches; grayish brown (10YR 5/2), clay; moderate coarse prismatic structure parting to moderate medium angular blocky; very firm, extremely hard, very sticky, very plastic; many very fine and common fine roots between peds; common very fine moderate continuity tubular pores; 25 percent faint slickensides (pedogenic); 19 percent medium prominent red (2.5YR 4/6), 19 percent fine prominent red (2.5YR 4/6), 1 percent medium distinct yellowish brown (10YR 5/6), and 1 percent fine distinct yellowish brown (10YR 5/6) masses of oxidized iron throughout; extremely acid; gradual wavy boundary.

Bgss5—75 to 80 inches; greenish gray (5GY 5/1), clay; moderate coarse angular blocky structure; very firm, extremely hard, very sticky, very plastic; common fine, and many very fine roots between peds; common very fine moderate continuity tubular pores; 20 percent faint slickensides (pedogenic); 20 percent coarse prominent strong brown (7.5YR 5/8), and 20 percent fine prominent strong brown (7.5YR 5/8) masses of oxidized iron; 5 percent coarse distinct grayish brown (10YR 5/2) iron depletions; 3 percent fine spherical black (10YR 2/1) iron-manganese concretions throughout; extremely acid; clear wavy boundary.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 60 to 75 percent
*Other features:* Cracks 0.5 inch to 2 inches wide extend from the surface to a depth greater than 20 inches, when the soil is dry.

#### Ag horizon

Hue: 10YR to 5Y
*Value:* 3 to 6
*Chroma:* 1 or 2; if the value is less than 4, the horizon is less than 10 inches thick.
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from few to many
*Texture:* Clay
*Reaction:* Extremely acid to slightly acid

#### Bg horizon

*Hue:* 10YR to 5Y
*Value:* 4 to 6
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from few to many
*Texture:* Clay
*Other features:* Pressure faces range from few to many
*Reaction:* Extremely acid or very strongly acid

**Bgss horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 6 or 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from few to many
*Texture:* Clay
*Other features:* Slickensides range from few to many
*Reaction:* Extremely acid or very strongly acid

**Bss horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 6 or 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from few to many
*Texture:* Clay
*Other features:* Slickensides range from few to many
*Reaction:* Extremely acid to strongly acid

## Bernaldo Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread or riser
*Parent material*: Loamy alluvium derived from sedimentary rock
*Drainage class:* Well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 1 to 8 percent

### *Associated Soils*

- Bowie soils have 5 percent plinthite, and occur on higher positions.
- Erno soils have a shallow fragipan layer.
- Gallime soils have loamy surfaces 20 to 40 inches thick.
- Guyton soils are poorly drained, and occur in depressions.
- Hainesville soils are somewhat excessively drained, and are sandy throughout.
- Latch soils have sandy surfaces more than 40 inches thick.
- Latex soils are moderately well drained.
- Mollville soils are in depressions with gray colors.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs

### *Typical Pedon*

Bernaldo fine sandy loam in an area of Bernaldo fine sandy loam, 1 to 3 percent slopes, in other grass/herbaceous cover; located from the intersection of U.S. Highway 59 and Farm Market 2327 in Springdale; 1.2 miles east on Farm Market 2327; 0.9 mile south on County Road 3665; and 150 feet west of County Road on fence line road.

Atlanta North, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 13 minutes, 14.90 seconds N., and Longitude—94 degrees, 7 minutes, 47.80 seconds W.

A—0 to 4 inches; brown (10YR 4/3), fine sandy loam; weak fine granular structure; friable, slightly hard; limed; slightly acid; clear smooth boundary.

E—4 to 9 inches; brown (10YR 5/3), fine sandy loam; weak fine subangular blocky structure; friable, slightly hard; moderately acid; clear smooth boundary.

Bt1—9 to 18 inches; strong brown (7.5YR 5/6), loam; 1 percent fine distinct yellowish red (5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable, slightly hard; few faint clay films; strongly acid; gradual smooth boundary.

Bt2—18 to 31 inches; strong brown (7.5YR 5/6), sandy clay loam; 19 percent medium distinct yellowish red (5YR 5/6) and 1 percent fine faint yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable, slightly hard; few faint clay films; 19 percent medium distinct yellowish red (5YR 5/6) masses of oxidized iron; 5 percent brittleness; very strongly acid; gradual wavy boundary.

Bt/E1—31 to 44 inches; yellowish brown (10YR 5/6), sandy clay loam; 20 percent fine prominent yellowish red (5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable, slightly hard; few faint clay films; 20 percent fine prominent yellowish red (5YR 5/6) masses of oxidized iron; 10 percent pale brown (10YR 6/3) fine sandy loam, albic intrusions (E); 7 percent brittleness; very strongly acid; gradual wavy boundary.

Bt/E2—44 to 61 inches; yellowish brown (10YR 5/6), sandy clay loam; 20 percent fine prominent yellowish red (5YR 5/6) and 1 percent fine faint strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure parting to weak fine subangular blocky; friable, slightly hard; few faint clay films; 20 percent fine prominent yellowish red (5YR 5/6) masses of oxidized iron; 10 percent very pale brown (10YR 7/3) fine sandy loam, albic intrusions (E); 5 percent brittleness; very strongly acid; gradual wavy boundary.

Bt/E3—61 to 80 inches; yellowish brown (10YR 5/6), loam; 20 percent fine faint strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure parting to weak fine subangular blocky; firm, slightly hard; few faint clay films; 10 percent very pale brown (10YR 7/3) fine sandy loam, albic intrusions (E); very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 18 to 25 percent
*Other features:* Silt content is 25 to 40 percent in the control section. Rounded quartzite or ironstone pebbles range from none to few throughout the solum.
*Reaction:* Strongly acid to slightly acid in the A and E horizons, and very strongly acid to slightly acid in the Bt, Bt/E, BCt/E, B't and BCt horizons.

#### A horizon

*Hue:* 7.5YR or 10YR
*Value:* 3 to 6
*Chroma:* 2 to 4
*Color features*: Some horizons with value of 3 and chroma of 2 or 3, are less than 7 inches thick.
*Texture:* Fine sandy loam

#### E horizon

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 2 to 4
*Texture:* Fine sandy loam, very fine sandy loam, or loam

**E/B or BE horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 6 or 8
*Texture:* Fine sandy loam, very fine sandy loam, or loam

**Bt horizon**

*Hue:* 5YR to 10YR
*Value:* 4 to 7
*Chroma:* 3 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from none to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to many. Iron depletions with chroma of 2 or less, are below a depth of 30 inches.
*Texture:* Loam, sandy clay loam, or clay loam

**Bt/E horizon**

*Hue:* 5YR to 10YR
*Value:* 4 to 7
*Chroma:* 3 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Fine sandy loam, loam, or sandy clay loam
*Other features:* Albic material (E) in vertical streaks, pockets or coatings on the surface of peds make up 5 to 15 percent of the horizon. Some pedons have up to 4 percent nodular plinthite. About 5 to 15 percent of the Bt part is brittle.

**BCt/E horizon (where present)**

*Hue:* 5YR to 10YR
*Value:* 4 to 7
*Chroma:* 3 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Fine sandy loam, loam, or sandy clay loam
*Other features:* Albic material (E) in vertical streaks, pockets, or coatings on the surface of peds make up 5 to 15 percent of the horizon. Some pedons have up to 4 percent nodular plinthite. About 5 to 15 percent of the Bt part is brittle.

**B't or BCt horizon (where present)**

Colors: Shades of red, yellow, brown, or gray
*Texture:* Fine sandy loam, loam, or sandy clay loam
*Other features:* Albic materials in vertical streaks, pockets, or coatings make up 0 to 4 percent by volume.

## Bibb Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Flood plains
*Parent material*: Loamy alluvium derived from sedimentary rock

*Geology*: Alluvium
*Drainage class:* Poorly drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Cypress soils are very poorly drained and in oxbows.
- Manco soils have fine-silty control sections, and occur somewhat poorly drained.
- Mantachie soils have fine-loamy control sections with chroma of 3 or more.
- Sardis soils have fine-silty control sections.
- Socagee soils have fine-silty control sections.

### *Taxonomic Classification*

Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents

### *Typical Pedon*

Bibb fine sandy loam in an area of Bibb fine sandy loam, frequently flooded, in hardwoods; located from the intersection of Farm Market 2683 and Texas Highway 43 north of Smithland; 0.7 mile south on Texas Highway 43; 1.2 miles southwest on Lewis Chapel Road; 1.1 miles southwest on Sand County Road; and 60 feet south in flood plain. Smithland, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 50 minutes, 7.13 seconds N., and Longitude—94 degrees, 12 minutes, 33.29 seconds W.

A—0 to 4 inches; brown (10YR 4/3), fine sandy loam; 20 percent medium distinct brown (7.5YR 4/4) mottles; weak fine and medium granular structure; friable, slightly hard; many fine to coarse roots; 10 percent medium faint dark grayish brown (10YR 4/2) masses of reduced iron; 10 percent coarse faint dark grayish brown (10YR 4/2) masses of reduced iron; common lenses of organic matter composed of decaying leaves; very strongly acid; clear smooth boundary.

Ag—4 to 12 inches; dark grayish brown (10YR 4/2), fine sandy loam; 10 percent medium and coarse faint gray (10YR 5/1) mottles; weak fine granular structure; friable, slightly hard; 10 percent medium distinct brown (7.5YR 4/4) masses of oxidized iron; common brown rhyzospheres, and decaying leaves; strongly acid; clear smooth boundary.

Cg1—12 to 18 inches; gray (10YR 5/1), loam; massive; friable, slightly hard; 20 percent medium distinct brown (7.5YR 4/4) masses of oxidized iron; 20 percent fine distinct brown (7.5YR 4/4) masses of oxidized iron; thin lenses of fine sandy loam material; strongly acid; gradual smooth boundary.

Cg2—18 to 28 inches; gray (10YR 5/1), silt loam; massive; friable, slightly hard; 10 percent medium distinct brown (7.5YR 4/4) masses of oxidized iron; 10 percent fine distinct brown (7.5YR 4/4) masses of oxidized iron; thin lenses of fine sandy loam material; strongly acid; gradual smooth boundary.

Cg3—28 to 40 inches; gray (10YR 5/1), sandy loam; 10 percent medium faint grayish brown (10YR 5/2) mottles; massive; friable, slightly hard; 10 percent medium distinct brown (7.5YR 4/4) masses of oxidized iron; 10 percent fine distinct brown (7.5YR 4/4) masses of oxidized iron; strongly acid; gradual smooth boundary.

Cg4—40 to 52 inches; light brownish gray (10YR 6/2), fine sandy loam; 20 percent coarse faint pale brown (10YR 6/3) mottles; massive; friable, slightly hard; strongly acid; gradual smooth boundary.

Cg5—52 to 63 inches; light brownish gray (10YR 6/2), fine sandy loam; 20 percent coarse faint pale brown (10YR 6/3) mottles; massive; friable, slightly hard; 1

percent medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

Cg6—63 to 80 inches; light gray (10YR 7/1), sand; massive; friable, slightly hard; strongly acid.

#### *Range in Characteristics*

*Other features:* Content of mica flakes ranges from none to common. Content of rounded gravel typically ranges from 0 to 10 percent throughout, but may range to 35 percent in thin strata below a depth of 40 inches. Buried soil horizons, present in many pedons, have the same range in color and texture as the Ag horizon.
*Reaction:* Extremely acid to strongly acid throughout

**A or Ap horizon**

*Hue:* 7.5YR or 10YR
*Value:* 2 to 5
*Chroma:* 1 to 3
*Texture:* Fine sandy loam

**Ag horizon**

*Hue:* 10YR or 2.5Y
*Value:* 3 to 7
*Chroma:* 2 or less
*Color features*: Some pedons are neutral with value of 3 to 7
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from none to common
*Texture:* Sand, loamy sand, loamy fine sand, fine sandy loam, sandy loam, loam, or silt loam

**Cg horizon**

*Hue:* 10YR to 5BG
*Value:* 3 to 7
*Chroma:* 2 or less
*Color features*: Some pedons are neutral with value of 3 to 7
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from none to common
*Texture:* Fine sandy loam and is stratified with sandy loam, loam, or silt loam

## Bowie Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Well drained
*Permeability class:* Moderately slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 2 to 5 percent

#### *Associated Soils*

- Alazan soils are moderately well drained, and occur on stream terraces.
- Bernaldo soils occur on lower positions on stream terraces.

- Briley soils have loamy surfaces more than 20 inches thick.
- Cuthbert soils have a fine control section.
- Darco soils have loamy surfaces more than 20 inches thick.
- Eylau soils are moderately well drained and have a fragipan.
- Gallime soils have surface layers more than 20 inches thick.
- Iulus soils have a cambic horizon, and occur on flood plains.
- Kirvin soils have red clayey subsoil horizons.
- Kullit soils have less than 5 percent plinthite.
- Lilbert soils have sandy surfaces 20 inches or more thick.
- Rentzel soils have loamy surface greater than 20 inches thick.
- Sacul soils have clayey subsoils.
- Sailes soils have less than 5 percent plinthite.
- Tenaha soils have loamy surfaces more than 20 inches thick.
- Thage soils are moderately deep to a fragipan layer.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults

### *Typical Pedon*

Bowie fine sandy loam (fig. 17) in an area of Bowie fine sandy loam, 2 to 5 percent slopes, in hayland; located from the intersection of U.S. Highway 59 and Texas Highway 155 in Linden; 5.0 miles north on U.S. Highway 59; and 500 feet west in hayfield. Linden, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 2 minutes, 58.70 seconds N., and Longitude—94 degrees, 18 minutes, 0.50 seconds W.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2), fine sandy loam; weak fine granular structure; very friable, slightly hard; many very fine and fine roots; very strongly acid; clear wavy boundary.

E—6 to 10 inches; light yellowish brown (10YR 6/4), fine sandy loam; weak medium subangular blocky structure parting to weak medium granular; very friable, slightly hard; many very fine, fine, and common medium and coarse roots; common very fine to coarse pores; very strongly acid; clear wavy boundary.

Bt1—10 to 19 inches; yellowish brown (10YR 5/6), sandy clay loam; 5 percent prominent yellowish red (5YR 4/6) mottles; moderate fine and medium subangular blocky structure; friable, hard; many very fine and fine, common medium and coarse roots; many very fine to coarse pores; few faint clay films; strongly acid; gradual smooth boundary.

Bt2—19 to 27 inches; yellowish brown (10YR 5/6), sandy clay loam; 25 percent prominent yellowish red (5YR 4/6) and 5 percent distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; friable, hard; many very fine, fine, common medium and coarse roots; common very fine to coarse pores; few faint clay films; 1 percent fine iron-manganese concretions; strongly acid; gradual wavy boundary.

Btv/E1—27 to 41 inches; yellowish brown (10YR 5/6), sandy clay loam; 5 percent distinct yellowish brown (10YR 5/8) mottles; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; friable, hard; many very fine and fine, common medium and coarse roots between peds; common very fine to coarse pores; few faint pale brown (10YR 6/3) clay films; 15 percent prominent red (2.5YR 4/8) masses of oxidized iron, 5 percent prominent (5YR 4/8) masses of oxidized iron; 6 percent medium red (2.5YR 4/8) plinthite nodules; 1 percent fine iron-manganese concretions; 1 percent fine ironstone nodules; 1 percent medium ironstone nodules; 5 percent light gray (10YR 7/2) fine sandy loam, albic intrusions (E); very strongly acid; gradual wavy boundary.

**Figure 17.—Profile of Bowie fine sandy loam. Albic material (E) begins at a depth of about 27 inches.**

Btv/E2—41 to 57 inches; yellowish brown (10YR 5/6), sandy clay loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; friable, hard; common very fine, fine, common medium, and coarse roots between peds; common very fine to coarse pores; few faint pale brown (10YR 6/3) clay films; 30 percent light brownish gray (10YR 6/2) iron depletions; 30 percent red (2.5YR 4/6) masses of oxidized iron; 5 percent medium red (2.5YR 4/8) plinthite nodules; 3 percent fine red (2.5YR 4/6) ironstone nodules; 3 percent medium red (2.5YR 4/6) ironstone nodules; 15 percent light gray (10YR 7/2), fine sandy loam, albic intrusions (E); very strongly acid; gradual wavy boundary.

Bt/E—57 to 73 inches; strong brown (7.5YR 5/6), sandy clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm, very hard; common very fine, fine, common medium, and coarse roots between peds; common very fine to coarse pores; common faint pale brown (10YR 6/3) clay films on faces of peds and in pores; 30 percent light brownish gray (10YR 6/2) iron depletions; 30 percent red (2.5YR 4/6) masses of oxidized iron; 1 percent medium red (2.5YR 4/6) ironstone nodules; 20 percent light gray (10YR 7/2), fine sandy loam, albic intrusions (E); very strongly acid; gradual wavy boundary.

B’t—73 to 80 inches; 60 percent light brownish gray (10YR 6/2), 25 percent red (2.5YR 4/6), and 15 percent strong brown (7.5YR 5/6), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; very firm, extremely hard; common very fine roots between peds; common very fine to medium pores; few faint pale brown (10YR 6/3) clay films on faces of peds and in pores; very strongly acid.

### ***Range in Characteristics***

*Solum thickness:* 60 to more than 80 inches

*Clay content in the control section:* 18 to 30 percent

*Other features:* Silt plus very fine sand content ranges from 30 to 60 percent. The sand fraction is coarser than very fine sand range from 15 to 45 percent. The moisture control section is dry in some parts for 75 to 90 days in most years. Brittle masses or fragments comprise 5 to 40 percent by volume in horizons containing plinthite. Coarse fragments greater than 3 inches in size range from none to few.

*Concentrated minerals:* 5 percent or more plinthite segregations by volume are below a depth of 25 to 60 inches. Strongly cemented or indurated iron oxide concretions and ironstone pebbles less than 3 inches in diameter range from 0 to 5 percent by volume throughout. Base saturation at 50 inches below the top of the argillic horizon ranges from 10 to 34 percent, and the CEC ranges from 6.0 to 18.0 milliequivalents/100 grams.
*Reaction:* Very strongly acid to slightly acid in the A and E horizons, unless limed; and very strongly acid or strongly acid in the Bt, Btv, Btv/E, B't, BC, and C horizons.

**A horizon**

*Hue:* 10YR
*Value:* 3 to 5
*Chroma:* 2 to 4
*Color feature*: Some horizons with value of 3, are less than 7 inches thick
*Texture:* Fine sandy loam

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 3 or 4
*Texture:* Loamy fine sand, fine sandy loam, or very fine sandy loam

**EB or BE horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 6
*Texture:* Loamy fine sand, fine sandy loam, or very fine sandy loam
*Other features:* Combined thickness of the A, E, EB, and BE horizons is 6 to 20 inches

**Bt horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, and yellow range from none to many
*Texture:* Fine sandy loam, loam, sandy clay loam, or clay loam
*Other features:* Nodular plinthite ranges from 0 to 4 percent by volume. Streaks, coatings, or pockets of uncoated sand range from none to about 4 percent.

**Btv horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red and brown range from few to many in most pedons
*Redoximorphic depletions:* Some pedons have iron depletions below a depth of 30 inches
*Texture:* Fine sandy loam, loam, sandy clay loam, or clay loam
*Other features:* Coatings, streaks, or pockets of albic material range from a few to 4 percent by volume. Nodular plinthite makes up about 5 to 15 percent by volume.

**Btv/E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 4 to 8

*Redoximorphic concentrations:* Iron concentrations in shades of red or yellow range from few to many, or the matrix is mixed with these colors
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many, or the matrix is mixed with these colors
*Texture:* Fine sandy loam, loam, clay loam, or sandy clay loam
*Other features:* Most of the gray colors are albic materials (E) as coatings, streaks, or pockets. The albic materials (E) comprise 5 to 20 percent by volume. Plinthite segregations, mainly in nodular form, make up 5 to about 15 percent by volume.

**B't or BC horizon (where present)**

Colors: Shades of brown or gray with yellow or red redoximorphic concentrations, or the matrix is mixed or stratified with these colors.
*Texture:* Sandy clay loam, clay loam, or sandy clay. Some pedons have strata of fine sandy loam or clay.
*Other features:* Some pedons have up to 4 percent by volume of streaks or pockets of albic materials. Plinthite ranges from none to 4 percent by volume.

**C horizon (where present)**

Colors: Shades of red, yellow, or brown
*Texture:* Sandstone or stratified sandstone and shale/mudstone with texture of fine sandy loam, sandy clay loam, or sandy clay.

## Briley Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape*: Coastal plain
*Landform:* Interfluve or ridge
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Geology*: Queen City Sand Formation
*Drainage class:* Well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 2 to 5 percent

### *Associated Soils*

- Bowie soils have loamy surface layers less than 20 inches.
- Darco soils have sandy surface layers more than 40 inches.
- Duffern soils are sandy throughout.
- Kirvin soils have loamy surface layers and clayey subsoils.
- Kullit soils have fine-loamy control sections.
- Lilbert soils have 5 percent or more plinthite.
- Sailes soils have fine-loamy control sections.
- Tenaha soils have sola less than 60 inches thick to densic material.

### *Taxonomic Classification*

Loamy, siliceous, semiactive, thermic Arenic Paleudults

### *Typical Pedon*

Briley loamy fine sand in an area of Briley loamy fine sand, 2 to 5 percent slopes, in intermixed conifers and hardwoods; located from the intersection of U.S. Highway 59 and

Farm Market 2,327, north of Queen City; 0.4 mile north on U.S. Highway 59; 2.4 miles northwest on County Road 3659; 2.0 miles northwest on County Road 3551; 1.4 miles west on County Road 3555 to U.S. Army Corps of Engineers gate; and 120 feet south in woods. Atlanta North, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 14 minutes, 25.00 seconds N., and Longitude—94 degrees, 12 minutes, 40.00 seconds W.

A—0 to 10 inches; dark grayish brown (10YR 4/2), loamy fine sand; weak fine granular structure; very friable, loose; common fine roots; common fine pores; 1 percent fine wormcasts; moderately acid; clear smooth boundary.

E—10 to 22 inches; yellowish brown (10YR 5/4), loamy fine sand; weak fine granular structure; very friable, loose; few fine roots throughout; slightly acid; clear smooth boundary.

Bt1—22 to 39 inches; yellowish red (5YR 5/8), sandy clay loam; 5 percent fine distinct brown (7.5YR 5/4) mottles; moderate fine and medium subangular blocky structure; friable, hard; common fine and medium roots; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—39 to 54 inches; yellowish red (5YR 5/8), sandy clay loam; 10 percent fine and medium distinct brown (7.5YR 5/4), and 10 percent fine distinct red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable, hard; common fine roots; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—54 to 80 inches; red (2.5YR 4/8), sandy clay loam; 21 percent medium prominent light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable, hard; few faint clay films on faces of peds; 1 percent ironstone nodules; 3 to 4 percent streaks and pockets of 10YR 6/3 albic material; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* 60 to more than 80 inches

*Other features:* The soil is dry in the moisture control section for 75 to 90 cumulative days in most years. Ironstone pebbles range from none to about 5 percent by volume throughout the solum.

*Concentrated minerals:* Base saturation at a depth of 72 inches ranges from 15 to 35 percent.

*Reaction:* Very strongly acid to slightly acid in the A and E horizons; very strongly acid to moderately acid in the Bt horizon

**A horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 or 5
*Chroma:* 2 to 4
*Texture:* Loamy fine sand

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 2 to 4
*Texture:* Loamy fine sand

**Bt horizon**

*Hue:* 2.5YR or 5YR
*Value:* 4 or 5
*Chroma:* 6 or 8
*Color features*: Some pedons have hue of 7.5YR in the lower part
*Texture:* Fine sandy loam or sandy clay loam

*Other features:* Mottles in shades of red, brown, or yellow range from none to common in the upper part. Some pedons have a variegated matrix of these colors in the lower part. Nodular plinthite ranges from 0 to 4 percent in the lower part with or without streaks or pockets of uncoated sand.

## Cuthbert Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Position on hillslope*: Side slope
*Parent material*: Loamy marine deposits
*Geology*: Queen City Sand Formation
*Drainage class:* Well drained
*Permeability class:* Slow
*Soil depth class:* Moderately Deep to densic material
*Shrink-swell potential*: Moderate
*Slope*: 5 to 40 percent

### *Associated Soils*

- Bowie soils have fine-loamy control sections.
- Darco soils have loamy control sections.
- Elrose have fine-loamy control sections.
- Iulus soils have coarse-loamy control sections.
- Kirvin soils have sola of 40 to 60 inches, and occur on ridges.
- Redsprings soils have thicker sola, and occur on similar positions.
- Sacul soils have thicker sola, and occur at heads of drains.
- Sailes soils have fine-loamy control sections.
- Tenaha soils have sandy surfaces 20 to 40 inches thick.

### *Taxonomic Classification*

Fine, mixed, semiactive, thermic Typic Hapludults

### *Typical Pedon*

Cuthbert fine sandy loam in an area of Cuthbert fine sandy loam, 5 to 15 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 8 and Farm Market 995 in Redhill; 2.3 miles north on Texas Highway 8; 1.4 miles west and north on County Road 2338 to gap in fence; 600 feet northwest on woods road; 400 feet southwest on woods road; and 100 feet north in woods. Bryans Mill, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 9 minutes, 31.00 seconds N., and Longitude—94 degrees, 23 minutes, 12.00 seconds W.

A—0 to 9 inches; brown (7.5YR 5/4), fine sandy loam; weak fine and medium subangular blocky structure; very friable, soft; common very fine and fine roots; 4 percent ironstone nodules; strongly acid; clear smooth boundary.

Bt—9 to 24 inches; red (2.5YR 4/6), clay; moderate medium subangular blocky and moderate medium angular blocky structure; very firm, extremely hard; common very fine to medium roots; common distinct clay films on faces of peds; strongly acid; clear wavy boundary.

BtC—24 to 31 inches; red (2.5YR 4/8), clay loam; 10 percent fine distinct reddish yellow (7.5YR 6/8) mottles; weak medium and coarse subangular blocky structure; firm, hard; few very fine roots; few distinct red (2.5YR 4/6) clay films on faces of

peds; 15 percent fine prominent gray (10YR 6/1) shale fragments; strongly acid; gradual wavy boundary.

Cd1—31 to 66 inches; red (2.5YR 5/8), yellowish red (5YR 5/8), and gray (10YR 6/1), clay loam; massive; stratified, soft weathered sandstone 3 to 6 inches thick and shale one-fourth to one-half inch thick; very strongly acid; gradual wavy boundary.

Cd2—66 to 80 inches; gray (10YR 6/1), yellowish red (5YR 5/8), brownish yellow (10YR 6/8), and dark yellowish brown (10YR 4/6), sandy clay loam; massive; stratified, shale 0.5 inch to 2 inches thick; soft weathered sandstone 1/8-inch to 1 inch thick; extremely acid.

### *Range in Characteristics*

*Solum thickness:* 20 to 40 inches

*Clay content in the control section:* 35 to 60 percent

*Other features:* Silt content in the control section is less than 30 percent. Ironstone and sandstone fragments on or partially imbedded in the A horizon cover from less than 1 percent, to about 20 percent of the surface. These are mainly flat, angular fragments 1 to 6 inches thick, and 3 to 36 inches across the long axis.

*Concentrated minerals:* Base saturation in the Bt and Bt/C horizons ranges from 10 to 30 percent and the calcium-magnesium ratio is less than 1.

*Reaction:* Very strongly acid to slightly acid in the A and E horizons, extremely acid to strongly acid in the Bt, Bt/C, and BCt horizons, and extremely acid or very strongly acid in the C or Cd horizon.

*Other features:* A graded phase with no surface or subsurface horizons is also recognized.

#### A horizon

*Hue:* 7.5YR or 10YR

*Value:* 3 to 5

*Chroma:* 2 to 4

*Color features*: Some pedons have value of 3 and chroma of 1

*Texture:* Fine sandy loam, stony fine sandy loam, or gravelly fine sandy loam

*Coarse fragments:* Fragments less than 3 inches in diameter range from less than 2 percent to about 50 percent by volume.

#### E horizon (where present)

*Hue:* 7.5YR or 10YR

*Value:* 4 to 6

*Chroma:* 2 to 4

*Texture:* Fine sandy loam or gravelly fine sandy loam

*Coarse fragments*: Range from less than 2 percent to about 35 percent by volume, and are less than 3 inches in diameter

#### Bt horizon

*Hue:* 2.5YR to 7.5YR

*Value:* 3 to 5

*Chroma:* 4 to 8

*Redoximorphic concentrations:* Some pedons have yellow or brown iron concentrations that range from few to many

*Texture:* Sandy clay loam, clay loam, sandy clay, or clay

*Coarse fragments*: Make up less than 15 percent

*Other features:* Gray or brown horizontally oriented weathered shale fragments or strata are in the lower part of many pedons.

#### BCt horizon

Colors: Stratified or variegated in shades of red, brown, yellow, and gray

*Texture:* Fine sandy loam, sandy clay loam, or clay loam with or without strata of weathered sandstone and shale materials. Coarse fragments make up less than 15 percent.
*Other features:* The degree of weathering is variable and some pedons have only a few visible parent material fragments.

**C or Cd horizon**

Colors of loamy materials and sandstone: Shades of red, yellow, or brown
Colors of shale materials: Shades of mainly gray
*Texture:* Stratified weakly consolidated sandy clay loam weakly cemented sandstone, and shale soil materials.
*Coarse fragments*: Make up less than 15 percent
*Other features:* The amount of sandstone or shale materials is variable, and either may be absent in some pedons. Roots penetrate the materials but are concentrated along fractures or cleavage planes. Most pedons have clay flows along some vertical fractures. Many pedons have discontinuous, fractured, strongly cemented or indurated sandstone layers about 1 inch to 4 inches thick. They appear to have the slope of an ancient surface gradient, and occur within the B horizon of some pedons.

## Cypress Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Flood plains or oxbows
*Parent material*: Clayey alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Very poorly drained
*Permeability class:* Very slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bibb soils have coarse-loamy control sections.
- Iulus soils have coarse-loamy control sections.
- Sardis soils have fine-silty control sections.
- Socagee soils have fine-silty control sections.

### *Taxonomic Classification*

Fine, mixed, superactive, acid, thermic Typic Fluvaquents

### *Typical Pedon*

Cypress clay loam in an area of Cypress clay loam, submerged; located from the intersection of U.S. Highway 59 and Texas Highway 49 in Jefferson; 1.6 miles east and north on Texas Highway 49; 0.6 mile east on Moonlake Road; 0.15 mile south on farm access road; 0.2 mile east, 200 feet south on farm access road; and 60 feet west in slough. Jefferson, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 15.58 seconds N., and Longitude—94 degrees, 19 minutes, 23.32 seconds W.

O—0 to 3 inches; moderately decomposed plant material; matte of decomposed cypress leaves, twigs, root matte.
Ag—3 to 6 inches; very dark grayish brown (10YR 3/2), silty clay loam; weak fine granular structure; friable, slightly hard; many fine to coarse roots; 1 percent fine

distinct dark yellowish brown (10YR 4/6) masses of oxidized iron; many decaying twigs and organic masses; very strongly acid; clear smooth boundary.

Cg1—6 to 15 inches; gray (10YR 6/1), clay; massive; very firm, very hard; many fine to coarse roots; 20 percent black (10YR 2/1) manganese or iron-manganese stains; 10 percent medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; 1 percent fine distinct strong brown (7.5YR 5/6) masses of oxidized iron; extremely acid; clear wavy boundary.

Cg2—15 to 26 inches; gray (10YR 6/1), clay loam; massive; firm, hard; common fine and medium roots; 20 percent black (10YR 2/1) manganese or iron-manganese stains; 19 percent fine faint light gray (10YR 7/1) iron depletions; 10 percent fine distinct yellowish brown (10YR 5/6) masses of oxidized iron; extremely acid; gradual wavy boundary.

Cg3—26 to 40 inches; gray (5Y 5/1), clay loam; massive; very firm, very hard; 10 percent fine distinct yellowish brown (10YR 5/8) masses of oxidized iron; 10 percent fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron; matrix changes color with exposure to atmosphere; very strongly acid; gradual wavy boundary.

Cg4—40 to 51 inches; gray (5Y 5/1), silty clay; massive; very firm, very hard; 20 percent fine faint gray (5Y 5/1) iron depletions; 10 percent fine distinct yellowish brown (10YR 5/8) masses of oxidized iron; matrix changes colors exposure to atmosphere; very strongly acid; gradual wavy boundary.

Cg5—51 to 80 inches; gray (5Y 5/1), silty clay; massive; very firm, very hard; 10 percent coarse distinct brownish yellow (10YR 6/8) masses of oxidized iron; very strongly acid.

### ***Range in Characteristics***

*Solum thickness:* 3 to 8 inches
*Clay content in the control section:* 35 to 50 percent
*Redoximorphic features:* Depleted or gleyed matrix throughout
*Other features:* Organic carbon content decreases irregularly with depth or is greater than 0.2 percent at a depth of 50 inches below the soil surface
*Concentrated minerals:* None

#### O horizon

Colors: Shades of brown and black
*Texture:* Partially decomposed leaves, twigs, sticks, and roots
*Other features:* Thickness ranges up to 6 inches
*Reaction:* Extremely acid or very strongly acid

#### Ag horizon

*Hue:* 10YR to 5Y
*Value:* 3 to 6
*Chroma:* 1 or 2
*Color features*: Where value is 3, thickness is 6 inches or less
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from none to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to common
*Texture:* Silty clay loam or clay loam
*Reaction:* Extremely acid or very strongly acid

#### Cg horizon

*Hue:* 10YR to 5Y, 5GY, or 5G
*Value:* 5 or 6
*Chroma:* 1; or it has neutral hue with value of 5 or 6

*Redoximorphic concentrations:* Iron concentrations in shades of brown or olive range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray to green range from few to many
*Texture:* Clay loam, silty clay, or clay; however, some pedons have thin strata of silty clay loam
*Reaction:* Extremely acid or very strongly acid

## Darco Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Somewhat excessively drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 2 to 15 percent

### *Associated Soils*

- Bowie soils have loamy surface layer less than 20 inches thick.
- Briley soils have an arenic surface layer.
- Cuthbert soils have loamy surface, and occur on side slopes.
- Duffern soils are sandy throughout.
- Kirvin soils have loamy surface layer.
- Lilbert soils have an arenic surface layer.
- Rentzel soils have an arenic surface layer.
- Tenaha soils have an arenic surface layer and sola less than 60 inches.

### *Taxonomic Classification*

Loamy, siliceous, semiactive, thermic Grossarenic Paleudults

### *Typical Pedon*

Darco loamy fine sand (fig. 18) in an area of Darco loamy fine sand, 2 to 5 percent slopes, in intermixed conifers and hardwoods; located from the intersection of U.S. Highway 59 and Texas Highway 49 in Jefferson; 3.2 miles east on Texas Highway 49; 2.5 miles north on Texas Highway 248; 1.5 miles south and east on Stalls Road; and 20 feet west of road. Jefferson, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 49 minutes, 4.50 seconds N., and Longitude—94 degrees, 17 minutes, 56.70 seconds W.

A—0 to 4 inches; brown (10YR 4/3), loamy fine sand; weak very fine granular structure; loose, soft; many fine, common medium, and few coarse roots; few fine vesicular pores; 1 percent medium irregular ironstone nodules; strongly acid; clear smooth boundary.
E1—4 to 10 inches; yellowish brown (10YR 5/4), loamy fine sand; weak medium granular structure; loose, soft; common fine, medium, and few coarse roots; few fine vesicular pores; 1 percent fine ironstone nodules; strongly acid; gradual smooth boundary.
E2—10 to 28 inches; light yellowish brown (10YR 6/4), fine sand; single grain; loose, soft; common fine, medium, and few coarse roots; few fine vesicular pores; 1 percent fine ironstone nodules; strongly acid; gradual smooth boundary.

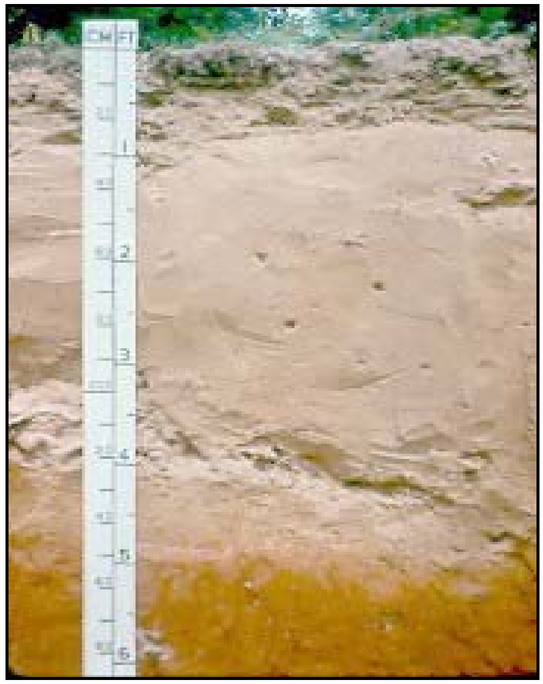

**Figure 18.—Profile of Darco loamy fine sand, 2 to 5 percent slopes. The thick sandy surface extends to a depth of 62 inches.**

E3—28 to 47 inches; light yellowish brown (10YR 6/4), fine sand; 2 percent brown (7.5YR 5/4) mottles; single grain; loose, soft; common fine, medium, and few coarse roots; few fine vesicular pores; 2 percent fine sandy loam splotches of coated sand grains; strongly acid.

E4—47 to 62 inches; light yellowish brown (10YR 6/4), fine sand; single grain; very friable, loose; few fine to coarse roots; common fine and medium vesicular pores; 8 percent brown (7.5YR 5/4) fine sandy loam (B); 3 percent subangular 3.0- to 9.8-inch cobble and stone fragments; strongly acid; clear smooth boundary.

Bt1—62 to 74 inches; red (2.5YR 5/8), sandy clay loam; 5 percent medium prominent yellowish brown (10YR 5/6) and 1 percent fine prominent pale brown (10YR 6/3) mottles; weak coarse prismatic structure parting to weak fine and medium subangular blocky; friable, hard; few fine to coarse roots; common fine vesicular pores; few faint red (2.5YR 5/6) clay films on lower surfaces of peds; very strongly acid; gradual smooth boundary.

Bt2—74 to 80 inches; yellowish red (5YR 5/6), sandy clay loam; 15 percent medium distinct yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure parting to weak fine and medium subangular blocky; very friable, hard; few fine to coarse roots; common fine vesicular pores; few faint reddish brown (5YR 5/4) clay films on lower surfaces of peds; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches

*Clay content in the control section:* 12 to 35 percent

*Redoximorphic features*: Iron concentrations in shades of brown, yellow, or red and iron depletions with chroma of 2 or less are in the subsoil below a depth of 50 inches in some pedons

*Other features:* The sand fraction contains less than 10 percent coarse or very coarse sand

*Concentrated minerals:* Base saturation ranges from 15 to 35 percent in the lower part of the Bt horizon. The exchangeable calcium content ranges from 1 to 3 meq/100 grams of soil.
*Reaction:* Very strongly acid to slightly acid in the A and E horizons, unless limed, and very strongly acid or strongly acid in the Bt horizon, unless limed.

**A horizon**

*Hue:* 10YR
*Value:* 3 to 5
*Chroma:* 2 or 3
*Texture:* Loamy fine sand

**E horizon**

*Hue:* 10YR
*Value:* 4 to 6
*Chroma:* 3 or 4
*Texture:* Loamy fine sand, fine sand

**Bt horizon**

*Hue:* 2.5YR to 10YR
*Value:* 4 to 6
*Chroma:* 6 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from none to common
*Redoximorphic depletions:* Iron depletions with chroma of 2 or less are below a depth of 50 inches in some pedons
*Texture:* Fine sandy loam or sandy clay loam, however clay loam textures also are below a depth of 60 inches in some pedons.
*Other features:* Plinthite ranges from 0 to 5 percent

## Duffern Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Sandy marine deposits derived from sedimentary rock
*Geology*: Sparta Sand Formation
*Drainage class:* Excessively drained
*Permeability class:* Rapid
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 1 to 5 percent

***Associated Soils***

- Briley soils have argillic horizons on similar positions.
- Darco soils have argillic horizons on similar positions.
- Lilbert soils have argillic horizons on similar positions.
- Tenaha soils have argillic horizons on lower side slopes.

***Taxonomic Classification***

Thermic, coated Lamellic Quartzipsamments

### *Typical Pedon*

Duffern fine sand in an area of Duffern fine sand, 1 to 5 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Farm Road 726 and Farm Road 729 west of Kellyville and Jefferson; 400 feet west on Farm Road 729; 410 feet north on Plantation Road; and 10 feet east of road. Kellyville, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 48.00 seconds N., and Longitude—94 degrees, 28 minutes, 10.00 seconds W.

A—0 to 4 inches; brown (10YR 4/3), fine sand; weak fine and medium granular structure; very friable; common fine to coarse roots; very strongly acid; clear smooth boundary.

E1—4 to 10 inches; dark yellowish brown (10YR 4/4), fine sand; weak fine and medium granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

E2—10 to 26 inches; dark yellowish brown (10YR 4/4), fine sand; weak fine granular structure; loose; common fine and medium roots; strongly acid; gradual wavy boundary.

E3—26 to 43 inches; dark yellowish brown (10YR 4/4), fine sand; 1 percent fine distinct light yellowish brown (10YR 6/4) mottles; weak fine granular structure; loose; few fine and medium roots; very strongly acid; gradual wavy boundary.

Bw1—43 to 56 inches; yellowish brown (10YR 5/6), fine sand; 15 percent medium distinct light yellowish brown (10YR 6/4) and 1 percent fine prominent yellowish red (5YR 5/6) mottles; weak fine granular structure; loose; few fine and medium roots; strongly acid; gradual wavy boundary.

Bw2—56 to 69 inches; brownish yellow (10YR 6/6), fine sand; weak fine granular structure; loose; few pockets and streaks of very pale brown 10YR 7/3 clean sand; few strong brown 7.5YR 5/6 coated sand grains; strongly acid; gradual wavy boundary.

Bw3—69 to 75 inches; brownish yellow (10YR 6/6), fine sand; weak fine granular structure; loose; few fine strong brown (7.5YR 5/6) lamella; common very pale brown (10YR 7/3) clean sand pockets; very strongly acid; gradual wavy boundary.

Bw4—75 to 85 inches; brownish yellow (10YR 6/6), fine sand; weak fine granular structure; loose; few fine reddish yellow (7.5YR 6/6) lamella and pockets; common very pale brown (10YR 7/3) clean sand pockets; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 5 to 10 percent
*Other features:* The silt plus clay content ranges from 5 to 10 percent in the control section. Depth to lamellae ranges from 40 to 70 inches. Lamellae thickness is less than 6 cumulative inches. The soil is dry in some parts of the moisture control section for 125 to 150 cumulative days in most years.
*Reaction:* Very strongly acid to slightly acid throughout

**A horizon**

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 2 to 4
*Texture:* Fine sand

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 8
*Chroma:* 2 to 4
*Texture:* Sand or fine sand

**Bw horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 8
*Chroma:* 6 or 8
*Texture:* Sand or fine sand
*Other features:* Lamellae of loamy fine sand, sandy loam, or fine sandy loam range from 0.1 centimeter to 2 centimeters thick, and are 2 centimeters to about 75 centimeters apart in most pedons. The lamellae have hue of 5YR to 10YR, value of 4 to 8, and chroma of 4 to 8. Most pedons have streaks and pockets of uncoated sand.

## Eastwood Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from shale
*Geology:* Wilcox Group, undivided
*Drainage class:* Moderately well drained
*Permeability class:* Very slow
*Soil depth class:* Deep to densic material
*Shrink-swell potential*: High
*Slope*: 1 to 15 percent

### *Associated Soils*

- Ashford soils are in an aquic moisture regime, and occur in depressions.
- Latex soils have fine-loamy upper subsoil, and occur on slightly higher positions.
- Metcalf soils have fine-silty upper subsoil, and occur on slightly lower positions.
- Wrightsville soils are dominantly gray, and occur on lower concave position.

### *Taxonomic Classification*

Fine, smectitic, thermic Chromic Vertic Hapludalfs

### *Typical Pedon*

Eastwood very fine sandy loam in an area of Eastwood very fine sandy loam, 5 to 15 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 49 and Farm Market 727 in Gray; 2.75 miles south on Farm Market 727; and 500 feet west of highway in cut-over woods. Trees, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 45 minutes, 9.32 seconds N., and Longitude—94 degrees, 4 minutes, 27.97 seconds W.

A—0 to 5 inches; dark grayish brown (10YR 4/2), very fine sandy loam; weak fine subangular blocky structure; friable; many fine to coarse roots; moderately acid; abrupt smooth boundary.

Bt1—5 to 16 inches; red (2.5YR 4/6), clay; 2 percent fine distinct yellowish brown (10YR 5/6) mottles; moderate fine subangular blocky structure; very firm; common medium and coarse roots; common distinct clay films; 5 percent pressure faces; strongly acid; clear wavy boundary.

Bt2—16 to 24 inches; red (2.5YR 4/6), clay; 15 percent medium distinct yellowish brown (10YR 5/6) and 15 percent fine prominent light brownish gray (10YR 6/2) mottles; moderate fine and medium subangular blocky structure; very firm;

common fine and medium roots; common distinct clay films; 5 percent nonintersecting slickensides; very strongly acid; clear wavy boundary.

Bt3—24 to 34 inches; yellowish red (5YR 4/6), clay; 20 percent medium prominent light brownish gray (10YR 6/2), 2 percent fine distinct yellowish brown (10YR 5/6), and 2 percent fine faint red (2.5YR 4/6) mottles; moderate fine and medium subangular blocky structure; very firm; few fine and medium roots; common distinct clay films; 5 percent nonintersecting slickensides; very strongly acid; clear smooth boundary.

Bt4—34 to 47 inches; 25 percent yellowish red (5YR 4/6), 25 percent pale red (2.5YR 6/2), 25 percent strong brown (7.5YR 5/6), and 25 percent gray (10YR 5/1), clay; weak fine and medium subangular blocky structure; very firm; common distinct clay films; 5 percent nonintersecting slickensides; very strongly acid; gradual wavy boundary.

BCt—47 to 57 inches; gray (10YR 5/1), clay loam; 10 percent medium prominent strong brown (7.5YR 5/6) and 1 percent medium prominent yellowish red (5YR 4/6) mottles; weak fine and medium subangular blocky structure parting to weak fine and medium platy; firm; few faint clay films; many fine fragments of gray (2.5Y 5/ ) shale; moderately acid; gradual wavy boundary.

Cd—57 to 80 inches; (2.5Y 4/ ), stratified silty clay loam; 10 percent medium faint (2.5YR 5/ ) and 1 percent fine prominent strong brown (7.5YR 5/6) mottles; massive; firm; strata of shale are 5 millimeters to 1.5 millimeters thick; neutral.

### *Range in Characteristics*

*Solum thickness:* 40 to 60 inches

*Clay content in the control section:* 35 to 65 percent; the weighted average is 40 to 60 percent.

*Redoximorphic features:* Few to common gray relict iron depletions that are not related to contemporary wetness are within the upper 10 inches of the argillic horizon

*Other features:* Typically the lower solum decreases about 20 to 30 percent in clay content, or a C horizon is encountered within 60 inches of the surface. Some pedons contain a few fragments mainly less than 6 inches across of petrified wood, fossilized shells, or ironstone pebbles. The clay content in the upper part of the Bt horizon is more than twice the clay content in the lower part of the epipedon. The COLE ranges from 0.09 to 0.14 in the upper 20 inches of the Bt horizon. The PLE ranges from 2.5 to about 4 inches in the upper 50 inches. The soil cracks when dry, typically between June and September. The cracks are 1/2 inch or more wide at a depth of 20 inches and are at least 12 inches long.

*Concentrated minerals:* Aluminum saturation in the upper 20 inches of the argillic horizon has a weighted average of 45 to 65 percent. Base saturation is 35 to 60 percent at 50 inches below the top of the argillic horizon or at the base of a BCt horizon, whichever is shallower.

*Reaction:* Very strongly acid to moderately acid in the A, E, and EB horizons, unless limed; extremely acid to strongly acid in the upper part of the Bt horizon; extremely acid to moderately acid in the lower part of the Bt horizon; extremely acid to slightly acid in the BCt horizon; and extremely acid to neutral in the C or Cd horizon

### A horizon

*Hue:* 7.5YR or 10YR
V*alue:* 3 to 5
*Chroma:* 2 to 4
*Texture:* Very fine sandy loam

**E or EB horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 3 to 6
*Texture:* Fine sandy loam, very fine sandy loam, silt loam, or loam
*Other features*: Combined thickness of the A, E, and EB horizons ranges from 3 to 10 inches

**Upper part of the Bt horizon**

*Hue:* 2.5YR or 5YR
*Value:* 3 to 5
*Chroma:* 6 or 8
*Redoximorphic features:* Relict mottles range from none to common, mainly in shades of brown or gray in the Bt1 horizon and from few to many in the Bt2 horizon
*Texture:* Clay or silty clay. Clay content ranges from 40 to 65 percent.
*Other features:* Pressure faces and small slickensides range from none to common in the Bt2 horizon.

**Lower part of the Bt horizon**

Colors: Shades of red, brown, or gray
*Redoximorphic features:* Relict mottles in shades of yellow range from few to many and some horizons have a variegated matrix.
*Texture:* Clay, silty clay with clay content ranging from 35 to 60 percent
*Other features:* Pressure faces and small slickensides less than 4 inches across range from few to common.

**BCt horizon**

Colors: Shades of brown or gray with lithochromic mottles of these colors, and with or without red or yellow mottles. Some pedons have a variegated matrix of these colors.
*Texture:* Loam, clay loam, or silty clay loam
*Other features:* Few to common white masses of barite

**C or Cd horizon**

Colors: Shades of brown or gray with mottles and/or strata of these colors and with or without yellow colors.
*Texture:* Stratified fine sandy loam to silty clay loam
*Other features:* The material is weakly consolidated and slakes in water. Most pedons contain a few masses of white barite salts.

## Elrose Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from glauconitic sandstone
*Geology*: Weches Formation
*Drainage class:* Well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 2 to 5 percent

### *Associated Soils*

- Cuthbert soils have clayey subsoils, and occur on higher positions.
- Kirvin soils have clayey subsoils, and occur on higher positions.
- Redsprings soils have clayey subsoils, and occur on higher positions.
- Sailes soils have a base saturation less than 35 percent.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Typic Paleudalfs

### *Typical Pedon*

Elrose fine sandy loam (fig. 19) in an area of Elrose fine sandy loam, 2 to 5 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Farm Market 161 and Texas Highway 155; 1.0 mile west on Texas 155; 0.2 mile north on County Road 1595; and 50 feet east in woods. Lone Star, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 52 minutes, 51.90 seconds N., and Longitude—94 degrees, 37 minutes, 38.80 seconds W.

A—0 to 3 inches; dark grayish brown (10YR 4/2), fine sandy loam; moderate fine granular structure; very friable, soft; common coarse, and many very fine to medium roots; 3 percent fine irregular ironstone nodules; very strongly acid; clear smooth boundary.

E—3 to 13 inches; brown (7.5YR 5/4), fine sandy loam; weak fine and medium subangular blocky structure; very friable, soft; many coarse and many very fine to medium roots; many very fine and fine tubular pores; 3 percent fine irregular ironstone nodules; strongly acid; clear smooth boundary.

Bt1—13 to 27 inches; red (2.5YR 4/6), loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; friable, hard; many coarse and many very fine to medium roots; many very fine and fine tubular pores; 10 percent prominent black (10YR 2/1) organic stains: common faint reddish brown (2.5YR 4/4) clay films; 2 percent fine irregular ironstone nodules; few strong brown (7.5YR 5/6) vertical krotovina linings and pockets; moderately acid; gradual wavy boundary.

Bt2—27 to 38 inches; red (2.5YR 4/6), loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; friable, hard; many very fine to medium roots; many very fine and fine tubular pores; 5 percent prominent black (10YR 2/1) organic stains; many faint reddish brown (2.5YR 4/4) clay films; 5 percent fine irregular ironstone nodules; 5 percent medium irregular ironstone nodules; few strong brown (7.5YR 5/6) vertical krotovina linings and pockets; 2 percent strong brown (7.5YR 5/8) glauconite fragments; moderately acid; gradual wavy boundary.

Bt3—38 to 51 inches; red (2.5YR 4/6), clay loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; firm, very hard; common very fine roots between peds; many very fine and fine tubular pores; 2 percent prominent black (10YR 2/1) organic stains; many faint reddish brown (2.5YR 4/4) clay films; 14 percent fine irregular ironstone nodules; 14 percent medium irregular ironstone nodules; 5 percent subangular 0.1- to 3.0-inch glauconite fragments; few strong brown (7.5YR 5/6) vertical krotovina linings and pockets; 4 percent strong brown (7.5YR 5/8) glauconite; moderately acid; gradual wavy boundary.

Bt4—51 to 72 inches; red (2.5YR 4/6), sandy clay; 10 percent medium distinct yellowish red (5YR 5/6) mottles; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; friable, hard; common very fine roots between peds; many very fine and fine tubular pores; 2 percent prominent black (10YR 2/1) organic stains; 3 percent prominent brown (7.5YR 5/3) skeletans; common faint reddish brown (2.5YR 4/4) clay films; 14 percent fine irregular ironstone nodules; 14 percent medium irregular ironstone nodules; 10 percent subangular 0.1- to 3.0-inch glauconite fragments; 5 percent strong brown (7.5YR 5/8) glauconite; strongly acid; gradual wavy boundary.

**Figure 19.—Profile of Elrose fine sandy loam, 2 to 5 percent slopes. The red colors in the profile are caused by the high amount of iron and glauconite.**

Bt5—72 to 80 inches; red (2.5YR 4/6), sandy clay loam; 19 percent coarse distinct yellowish red (5YR 5/8) and 15 percent fine and medium prominent strong brown (7.5YR 5/8) mottles; moderate fine and medium subangular blocky structure; friable, hard; common very fine roots between peds; many very fine and fine tubular pores; 4 percent prominent brown (7.5YR 5/3) skeletans; few faint reddish brown (2.5YR 4/4) clay films; 12 percent medium irregular ironstone nodules; 12 percent fine irregular ironstone nodules; 2 percent coarse irregular ironstone nodules; 15 percent subangular 0.1- to 3.0-inch glauconite fragments; strongly acid.

### *Range in Characteristics*

*Solum thickness:* 60 to more than 80 inches
*Clay content in the control section:* 25 to 35 percent
*Redoximorphic features:* Relict iron concentrations that are not caused by contemporary wetness are in the lower part of the surface, and subsoil layers.
*Other features:* Depth to a layer with clay content greater than 35 percent ranges from 20 to about 40 inches.
*Concentrated minerals:* The base saturation at a depth of 72 inches ranges from 35 to 75 percent. Ironstone pebbles range from none to 35 percent by volume in the A horizon and less than 10 percent in the argillic horizon. Some pedons contain a few fragments of petrified wood, glauconitic ironstone, ironstone, or fossilized shells.

### A horizon

*Hue:* 2.5YR to 10YR
*Value:* 4 or 5
*Chroma:* 2 to 6
*Texture:* Fine sandy loam
*Reaction:* Very strongly acid to slightly acid, unless limed

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 3 or 4
*Redoximorphic concentrations:* Relict iron concentrations with chroma of 6 or 8, range from none to common
*Texture:* Fine sandy loam
*Reaction:* Very strongly acid to slightly acid, unless limed

**Bt horizon (upper part)**

*Hue:* 10R to 5YR
*Value:* 3 to 5
*Chroma:* 4 to 8
*Texture:* Loam, sandy clay loam, or clay loam with clay content of 15 to 30 percent
*Reaction:* Very strongly acid to slightly acid

**Bt horizon (lower part)**

*Hue:* 10YR to 5YR
*Value:* 3 to 6
*Chroma:* 6 or 8
*Redoximorphic concentrations:* Relict iron concentrations range from none to many in shades of red, yellow, or brown
*Texture:* Clay loam, sandy clay, or clay. Clay content ranges from 30 to 55 percent and is greater than 35 percent in some part. Some pedons have sandy clay loam or loam textures below a depth of 60 inches.
*Other features:* Weathered glauconitic materials in spots or fragments range from few to common in some part of most pedons. Some pedons have a few streaks of clean sand in the lower part.
*Reaction:* Very strongly acid to slightly acid

**2BC or 2C horizon: (where present)**

Colors: Shades of red, brown, or gray
*Texture:* Clay loam, silty clay, or clay
*Other features:* Depth to a 2BC or 2C horizon is more than 60 inches
*Reaction:* Very strongly acid to moderately acid

## Erno Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Pimple mound
*Parent material*: Loamy alluvium derived from sedimentary rock
*Drainage class:* Well drained
*Permeability class:* Slow
*Soil depth class:* Moderately deep to a fragipan layer
*Shrink-swell potential*: Low
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bernaldo soils are on similar to slightly higher positions.
- Guyton soils are on poorly drained concave flats.

- Latex soils are on similar to slightly higher positions.
- Metcalf soils are on slightly lower positions and have gray mottles in the upper 10 inches of the argillic horizon.
- Thage soils are on slightly lower positions and have gray mottles in the upper 10 inches of the argillic horizon.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Fragic Paleudalfs

### *Typical Pedon*

Erno very fine sandy loam in an area of Erno-Thage complex, 0 to 2 percent slopes; located from the intersection of Farm Road 1635 and Texas Highway 77; 0.6 mile north on Farm Road 1635 to the intersection with County Road 4794; 1.4 miles east on County Road 4794; and 75 feet south in hayfield. Ravanna, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 5 minutes, 35.16 seconds N., and Longitude—94 degrees, 4 minutes, and 54.03 seconds W.

A—0 to 3 inches; brown (10YR 4/3), very fine sandy loam, pale brown (10YR 6/3), dry; weak medium subangular blocky structure; friable, moderately hard; many very fine roots; neutral; clear smooth boundary.

E—3 to 10 inches; brown (10YR 5/3), very fine sandy loam, very pale brown (10YR 8/3), dry; weak medium subangular blocky structure; friable, hard; many very fine roots; common fine moderate continuity tubular pores; neutral; clear smooth boundary.

Bt—10 to 20 inches; yellowish brown (10YR 5/6), clay loam; moderate medium subangular blocky structure; firm, hard; common fine roots; common fine moderate continuity tubular pores; few faint yellowish brown (10YR 5/4) clay films on surfaces along pores and common distinct yellowish brown (10YR 5/4) clay films on faces of peds; strongly acid; gradual wavy boundary.

Btx—20 to 38 inches; brownish yellow (10YR 6/6), loam; 2 percent reddish yellow (7.5YR 6/8) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; extremely firm, very hard; common fine roots; common fine high continuity tubular and common medium high continuity tubular pores; few faint light brownish gray (10YR 6/2) clay films on surfaces along pores; 3 percent very pale brown (10YR 7/3) skeletans on surfaces along root channels; 1 percent cylindrical strong brown (7.5YR 5/8) masses of oxidized iron lining pores; 80 percent of total volume is brittle; slakes in water; strongly acid; gradual irregular boundary.

Btx/E1—38 to 46 inches; light yellowish brown (2.5Y 6/4), loam; 20 percent medium yellowish brown (10YR 5/8) and 2 percent medium red (2.5YR 5/8) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; very firm; common fine high continuity tubular pores; 15 percent by volume albic material (E); few distinct brown (7.5YR 5/4) clay films on vertical faces of peds; 15 percent prominent white (10YR 8/1) skeletans on vertical faces of peds; 20 percent coarse irregular light gray (10YR 7/1) iron depletions on faces of peds; 1 percent fine spherical moderately cemented dark brown (10YR 3/3) throughout; 50 percent of total volume is brittle; moderately acid; gradual irregular boundary.

Btx/E2—46 to 73 inches; light yellowish brown (2.5Y 6/4), very fine sandy loam; 8 percent medium yellowish brown (10YR 5/8) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine high continuity tubular and many medium high continuity tubular pores; 30 percent by volume albic material (E); few faint grayish brown (10YR 5/2) clay films on surfaces along pores; 30 percent prominent white (10YR 8/1) skeletans on vertical faces of peds; 30 percent coarse irregular gray (10YR 6/1) iron depletions on faces of peds; 1 percent fine spherical moderately cemented dark brown (10YR

3/3) masses; 30 percent of total volume is brittle; strongly acid; gradual irregular boundary.

Btx/E3—73 to 80 inches; light yellowish brown (2.5Y 6/4), loam; 20 percent medium strong brown (7.5YR 5/8) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; common fine high continuity tubular and common medium high continuity tubular pores; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 15 percent prominent white (10YR 8/1) skeletans on vertical faces of peds; 20 percent coarse irregular gray (10YR 6/1) iron depletions on faces of peds; 3 percent medium spherical red (2.5YR 4/8) masses of oxidized iron on faces of peds; 1 percent fine spherical moderately cemented dark brown (10YR 3/3) masses; 30 percent of total volume is brittle; strongly acid.

### *Range in Characteristics*

*Solum thickness:* 60 to more than 80 inches
*Clay content in the control section:* 18 to 35 percent
*Other features:* Depth to the fragipan ranges from 20 to 40 inches. The degree of expression of the fragipan generally grades from minimal to maximal with depth.
*Concentrated minerals:* Base saturation at 30 inches below the top of the fragipan, ranges from 35 to 66 percent.

#### A horizon

*Hue:* 10YR
*Value:* 4 or 5
*Chroma:* 2 to 4
*Texture:* Very fine sandy loam
*Reaction:* Very strongly acid to slightly acid, unless limed

#### E horizon

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 3 or 4
*Texture:* Very fine sandy loam
*Reaction:* Very strongly acid to slightly acid, unless limed

#### Bt horizon

*Hue:* 5YR to 10YR
*Value:* 4 to 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, and yellow range from few to common
*Texture:* Clay loam, loam, or fine sandy loam
*Clay content*: 18 to 35 percent
*Silt content*: 20 to 50 percent
*Other features:* Streaks and coatings on surfaces of peds of clean sand range from 0 to 4 percent by volume. Slightly brittle masses comprise up to 40 percent by volume.
*Reaction:* Strongly acid or moderately acid

#### Btx or Btx/E horizon

*Hue:* 7.5YR to 2.5Y
*Value:* 4 to 7
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, and yellow range from few to many

*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Loam, fine sandy loam, and clay loam
*Clay content*: 18 to 35 percent
*Silt content*: 20 to 50 percent
*Other features:* Streaks and coatings on peds of E materials have hue of 10YR, value of 6 or 7, and chroma of 2 to 4, and range from 3 to 15 percent by volume. These are along vertical polygonal prisms. Sixty to ninety percent of the matrix is slightly to strongly brittle. Plinthite nodules range from 0 to 4 percent by volume.
*Reaction:* Very strongly acid or strongly acid

## Eylau Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Moderately well drained
*Permeability class:* Moderately slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bowie soils have 5 percent plinthite, and occur on higher positions.
- Kullit soils lack brittle properties and have clayey Bt.
- Sacul soils have fine control sections.
- Wrightsville soils are poorly drained and on open depressions.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Fragiaquic Paleudults

### *Typical Pedon*

Eylau very fine sandy loam in an area of Eylau very fine sandy loam, 0 to 2 percent slopes, in conifers; located from the intersection of Texas Highway 77 and Farm Market 250 in Marietta; 0.3 mile north on County Road 2589; 0.2 mile east County Road 2590; 2.2 miles north and east on County Road 2592; and 50 feet west in woods. Marietta, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 13 minutes, 16.90 seconds N., and Longitude—94 degrees, 31 minutes, 31.30 seconds W.

A—0 to 6 inches; brown (10YR 4/3), very fine sandy loam; weak fine subangular blocky structure; friable, slightly hard; few very fine and fine roots; few fine pores; 1 percent medium distinct strong brown (7.5YR 5/6) ironstone nodules; 1 percent fine distinct strong brown (7.5YR 5/6) ironstone nodules; strongly acid; clear smooth boundary.

E—6 to 16 inches; brown (10YR 5/3), loam; weak medium subangular blocky and weak fine subangular blocky; friable, slightly hard; few fine and medium roots; few fine and medium pores; 1 percent fine distinct strong brown (7.5YR 5/6) ironstone nodules; 1 percent medium distinct strong brown (7.5YR 5/6) ironstone nodules; strongly acid; clear wavy boundary.

Bt1—16 to 20 inches; brownish yellow (10YR 6/6), clay loam; moderate fine and medium subangular blocky structure; friable; few fine roots; few fine pores; few faint clay films; 1 percent fine distinct yellowish red (5YR 5/8) ironstone nodules;

10 percent brown (10YR 5/3) fine sandy loam clay depletions; very strongly acid; gradual wavy boundary.

Bt2—20 to 38 inches; brownish yellow (10YR 6/6), clay loam; moderate medium subangular blocky and moderate fine subangular blocky structure; firm, very hard; few fine and medium pores; few faint clay films; 5 percent medium prominent yellowish red (5YR 5/8) ironstone nodules; 1 percent fine faint light brownish gray (10YR 6/2) iron depletions; 3 percent pale brown (10YR 4/4) clay loam clay depletions; 2 to 5 percent brittle bodies; very strongly acid; gradual wavy boundary.

Btx—38 to 48 inches; brownish yellow (10YR 6/6), clay loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; firm, hard; 5 percent fine and medium distinct yellowish red (5YR 5/8) ironstone nodules; 1 percent fine and medium faint light brownish gray (10YR 6/2) iron depletions; 40 percent dark yellowish brown (10YR 4/4) brittle bodies surrounded by pale brown (10YR 6/3) silt; strongly acid; gradual wavy boundary.

Bt/E1—48 to 60 inches; yellowish brown (10YR 5/6), clay loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; firm, hard; few faint strong brown (7.5YR 5/6) clay films on bottom faces of peds; 2 percent coarse yellowish red (5YR 5/8) ironstone nodules; 1 percent fine and medium faint light brownish gray (10YR 6/2) iron depletions; 15 percent light gray (10YR 7/2) fine sandy loam (E) material; very strongly acid; gradual wavy boundary.

Bt/E2—60 to 70 inches; strong brown (7.5YR 5/6), clay loam; weak coarse prismatic structure parting to moderate fine and medium subangular blocky; firm, hard; few faint clay films; 2 percent fine and medium prominent yellowish red (5YR 5/8) ironstone nodules; 2 percent fine and medium faint light brownish gray (10YR 6/2) iron depletions; 10 percent light gray (10YR 7/2) fine sandy loam (E); very strongly acid; gradual wavy boundary.

B’t—70 to 80 inches; 40 percent yellowish red (5YR 5/8), 30 percent pinkish gray (7.5YR 6/2), and 30 percent light brownish gray (10YR 6/2), clay loam; weak fine and medium subangular blocky structure; firm, hard; few faint clay films; very strongly acid.

### ***Range in Characteristics***

*Solum thickness:* More than 80 inches
*Concentrated minerals:* Base saturation ranges from 12 to 30 percent at 50 inches below the top of the Bt horizon.

#### A horizon

*Hue:* 10YR
*Value*: 4 to 6
*Chroma:* 2 to 4
*Redoximorphic depletions:* Light brownish gray or gray iron depletions occur within 30 inches of the surface
*Texture:* Very fine sandy loam
*Reaction:* Strongly acid to slightly acid

#### E horizon

*Hue:* 7.5YR or 10YR
*Value*: 5 or 6
*Chroma:* 3 to 6
*Redoximorphic depletions:* Light brownish gray or gray iron depletions occur within 30 inches of the surface
*Texture:* Very fine sandy loam
*Reaction:* Strongly acid to slightly acid

**Bt horizon**

*Hue:* 7.5YR or 10YR
*Value*: 5 or 6
*Chroma:* 6 or 8
*Redoximorphic concentrations:* Iron concentrations in shades of red range from none to common
*Redoximorphic depletions:* Iron depletions range from none to few in shades of gray, and occur within 30 inches of the surface
*Texture:* Clay loam, sandy clay loam, or silty clay loam
*Other features:* Up to 30 percent of some or all of these subhorizons are brittle. Brittleness is mainly in the strong brown and brownish yellow colors. Some pedons have up to 20 percent albic intrusions in the upper part of the argillic horizon
*Reaction:* Very strongly acid or strongly acid

**Btx horizon**

*Hue:* 7.5YR or 10YR
*Value*: 5 or 6
*Chroma*: 6 or 8
*Redoximorphic concentrations:* Iron concentrations in shades of red range from none to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to few
*Texture:* Clay loam, sandy clay loam, or silty clay loam
*Other features:* 40 to 60 percent of some or all of these subhorizons are brittle. Brittleness is mainly in the strong brown and brownish yellow colors. Some pedons have up to 20 percent albic intrusions in the upper part of the argillic horizon
*Reaction:* Very strongly acid or strongly acid

**Bt/E horizon**

*Hue:* Bt part—2.5YR to 5Y; E part—10YR
*Value*: Bt part—2 to 8; E part—6 or 7
*Chroma*: Bt part—2 to 8; E part—1 to 4
*Colors*: Variegated
*Texture:* Bt part—sandy clay loam, clay loam, or loam; E part—typically fine sand, but includes very fine sand, silt, or fine sandy loam
*Other features:* Intrusions of albic material make up 5 to 30 percent of the horizon. Depth to the Bt/E horizon ranges from 25 to 55 inches.
*Reaction:* Very strongly acid or strongly acid

**B’t horizon**

*Colors*: Variegated in shades of red, brown, or gray
*Texture:* Sandy clay loam, clay loam, or loam
*Reaction:* Very strongly acid or strongly acid

## Gallime Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Mound
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Well drained

*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 1 to 5 percent

### *Associated Soils*

- Bernaldo soils have surface layers less than 20 inches.
- Bowie soils have surface layers less than 20 inches.
- Guyton soils have a fine-silty control section, and are poorly drained.
- Hainesville soils are sandy throughout.
- Latch soils have loamy surface layers greater than 40 inches.
- Latex soils have surface layers less than 20 inches.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs

### *Typical Pedon*

Gallime fine sandy loam in an area of Gallime fine sandy loam, 1 to 5 percent slopes; located from the intersection of Farm Market 130 and Farm Market 250 (north of Hughes Springs); 0.26 mile south on Farm Market 250; 0.4 mile southeast on County Road 2982 to gate; and 0.25 mile east along fence line to crossfence in pasture. Sardis, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 3 minutes, 4.00 seconds N., and Longitude—94 degrees, 35 minutes, 13.00 seconds W.

A—0 to 5 inches; brown (10YR 5/3), fine sandy loam; weak fine granular structure; very friable; strongly acid; clear smooth boundary.

E1—5 to 16 inches; light yellowish brown (10YR 6/4), fine sandy loam; weak fine subangular blocky structure; very friable; strongly acid; clear wavy boundary.

E2—16 to 27 inches; light yellowish brown (10YR 6/4), fine sandy loam; weak fine subangular blocky structure; friable; few strong brown (7.5YR 5/6) splotches of B material; moderately acid; clear wavy boundary.

Bt—27 to 38 inches; strong brown (7.5YR 5/6), loam; 2 percent fine faint light yellowish brown (10YR 6/4) mottles; weak coarse prismatic structure parting to weak fine subangular blocky; friable; 4 percent by volume albic material (E); few faint clay films; moderately acid; gradual wavy boundary.

Bt/E1—38 to 51 inches; strong brown (7.5YR 5/6), sandy clay loam; 2 percent fine faint light yellowish brown (10YR 6/4) mottles; weak coarse prismatic structure parting to weak fine subangular blocky; friable; 15 percent by volume albic material (E); few faint clay films; moderately acid; clear wavy boundary.

Bt/E2—51 to 54 inches; strong brown (7.5YR 5/6), sandy clay loam; weak coarse prismatic structure parting to weak fine and medium subangular blocky; friable; 17 percent by volume albic material (E); few faint clay films; 3 percent fine light brownish gray (10YR 6/2) iron depletions; 3 percent medium yellowish red (5YR 4/6) masses of oxidized iron; few brittle bodies; very strongly acid; clear wavy boundary.

Bt/E3—54 to 78 inches; yellowish brown (10YR 5/6), sandy clay loam; weak medium subangular blocky structure; firm; 5 percent by volume albic material (E); few faint clay films; light brownish gray (10YR 6/2) iron depletions; 5 percent coarse prominent red (2.5YR 5/6) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bt/E4—78 to 90 inches; red (2.5YR 5/6), sandy clay loam; weak medium subangular blocky structure; firm; few faint clay films; 3 percent coarse gray (10YR 5/1) iron depletions; 3 percent coarse prominent light brownish gray (10YR 6/2) iron depletions; 3 percent yellowish brown (10YR 5/6) masses of oxidized iron; 5 percent very pale brown (10YR 7/3) fine sandy loam E material; very strongly acid.

***Range in Characteristics***

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 18 to 25 percent
*Redoximorphic features:* Iron depletions in shades of gray at 30 to 65 inches deep
*Concentrated minerals:* Base saturation ranges from 35 to 60 percent in the lower part of the argillic horizon.
*Reaction:* Very strongly acid to slightly acid in the A and E horizons, unless limed, and very strongly acid to moderately acid in the Bt and Bt/E horizons.

**A horizon**

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 2 to 4
*Color features*: Some horizons with value and chroma of 3 or less, are less than 7 inches thick.
*Texture:* Fine sandy loam

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 2 to 4
*Texture:* Fine sandy loam
*Other features*: Combined thickness of the A and E horizons ranges from 20 to 40 inches

**Bt horizon**

*Hue:* 5YR to 10YR
*Value:* 5 or 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to common. However, the upper Bt horizon of some pedons do not contain iron concentrations.
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common
*Texture:* Loam, fine sandy loam, or very fine sandy loam

**Bt/E horizon**

*Hue:* Bt part—2.5YR to 10YR; E part—10YR or 2.5Y
*Value:* Bt part—2 to 8; E part—3 to 8
*Chroma:* Bt part—2 to 8; E part—1 or 2
*Texture:* Loam, sandy clay loam, or clay loam
*Other features:* Albic material in streaks, pockets, and coatings on the surface of peds make up 5 to 15 percent by volume of the horizon. Some pedons have a few nodular fragments of plinthite that make up less than 4 percent by volume.

## Gladewater Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* River valley, flood plain
*Parent material*: Clayey alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Somewhat poorly drained
*Permeability class:* Very slow

*Soil depth class:* Very deep
*Shrink-swell potential*: Very high
*Slope*: 0 to 1 percent

### *Associated Soils*

- Mantachie soils have fine-loamy control sections.
- Socagee soils have fine-silty control sections.

### *Taxonomic Classification*

Very-fine, smectitic, thermic Chromic Epiaquerts

### *Typical Pedon*

Gladewater clay in an area of Gladewater clay, frequently flooded; located from the intersection of U.S. Highway 59 and Farm Road 3129, about 8 miles north of Queen City; 2.2 miles east on Farm Road 3129; 0.9 mile northeast on County Road 3678 to gate; 0.5 mile north on private road; 1.5 miles northeast; 0.2 mile north in flood plain of the Sulphur River. Domino, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 17 minutes, 22.50 seconds N., and Longitude—94 degrees, 5 minutes, 2.90 seconds W.

A—0 to 8 inches; black (10YR 2/1), clay; strong fine and medium angular blocky structure; very firm, extremely hard, very sticky, very plastic; common very fine to coarse roots; common very fine and fine low continuity tubular pores; 10 percent faint pressure faces; strongly acid; clear wavy boundary.

Bg—8 to 12 inches; 88 percent dark gray (10YR 4/1), and 10 percent gray (10YR 5/1) clay; moderate medium angular blocky structure; very firm, extremely hard, very sticky, very plastic; common very fine to coarse roots; common very fine and fine low continuity tubular pores; 5 percent faint black (10YR 2/1) stains; 15 percent faint pressure faces; 2 percent fine spherical extremely weakly cemented iron-manganese concretions; strongly acid; clear wavy boundary.

Bgss1—12 to 19 inches; light brownish gray (10YR 6/2), clay; moderate medium and coarse prismatic structure parting to moderate medium angular blocky; very firm, extremely hard, very sticky, very plastic; common very fine to coarse roots; common very fine and fine low continuity tubular pores; 5 percent faint slickensides on faces of peds; 15 percent fine and medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; 5 percent fine and medium prominent reddish yellow (7.5YR 6/8) masses of oxidized iron; 2 percent fine spherical extremely weakly cemented iron-manganese concretions; very strongly acid; gradual wavy boundary.

Bgss2—19 to 27 inches; light brownish gray (10YR 6/2), clay; moderate coarse prismatic structure; very firm, extremely hard, very sticky, very plastic; common very fine to medium roots between peds; common very fine and fine low continuity tubular pores; 10 percent faint pressure faces; 30 percent faint slickensides on faces of peds; 15 percent fine and medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; 5 percent fine and medium prominent reddish yellow (7.5YR 6/8) masses of oxidized iron; 1 percent fine spherical extremely weakly cemented iron-manganese concretions; very strongly acid; gradual wavy boundary.

Bgss3—27 to 42 inches; gray (10YR 5/1), clay; moderate coarse prismatic structure; very firm, extremely hard, very sticky, very plastic; common very fine to medium roots between peds; common very fine and fine moderate continuity tubular pores; 35 percent faint slickensides on faces of peds; 15 percent fine and medium prominent strong brown (7.5YR 5/8) masses of oxidized iron; 5 percent fine and medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; 1 percent medium spherical extremely weakly cemented iron-manganese concretions; very strongly acid; gradual wavy boundary.

Bgss4—42 to 60 inches; grayish brown (2.5Y 5/2), clay; moderate coarse prismatic structure; very firm, extremely hard, very sticky, very plastic; common very fine to medium roots between peds; common very fine and fine moderate continuity tubular pores; 40 percent faint slickensides on faces of peds; 5 percent fine and medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; 5 percent fine and medium faint brown (10YR 5/3) iron depletions; 1 percent medium spherical extremely weakly cemented iron-manganese concretions; very strongly acid; gradual wavy boundary.

Bgss5—60 to 80 inches; grayish brown (2.5Y 5/2), clay; weak coarse prismatic structure; very firm, extremely hard, very sticky, very plastic; few very fine to medium roots between peds; common very fine and fine moderate continuity tubular pores; 40 percent faint slickensides on faces of peds; 8 percent fine and medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

### ***Range in Characteristics***

*Solum thickness:* More than 80 inches

*Clay content in control section*: 60 to 75 percent

*Redoximorphic features:* Iron-manganese concretions range from none to common in the A horizon and few to common below.

*Other features:* This is a cyclic soil and undisturbed areas have gilgai microrelief with microknolls 6 to 10 inches higher than microdepressions. Distance from the center of the microknoll to the center of the microdepression ranges from about 4 to 12 feet. The microknoll makes up about 20 percent, the intermediate or area between the knoll and depression about 50 percent, and the microdepression about 30 percent. The amplitude of waviness between the A horizon and high value colors in the lower part ranges from about 3 to 16 inches. The chimneys of high value materials on microknolls make up less than 3 percent of the surface area. These areas are mainly 1 to 5 feet long and 0.5 feet to 2 feet wide. Cracks 0.5 inch to 2.0 inches wide extend from the surface to a depth of more than 20 inches when the soil is dry. The cracks remain open for less than 90 cumulative days in most years. Intersecting slickensides begin at a depth of 10 to 24 inches and extend throughout the subsoil.

#### A horizon

*Hue:* 10YR

*Value:* 2 to 5

*Chroma:* 1 or 2

*Texture:* Clay

*Reaction:* Moderately acid to neutral

#### Bg horizon

*Hue:* 10YR or 2.5Y

*Value:* 4 to 5

*Chroma:* 1

*Color features*: Some pedons have value of 6 with chroma of 1 or 2

*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from few to many

*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many

*Texture:* Clay

*Reaction:* Strongly acid to slightly acid.

#### Bssg horizon:

*Hue:* 10YR or 2.5Y

*Value:* 3 to 6

*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Clay
*Other features:* Gypsum crystals range from none to common in the lower part
*Reaction:* Very strongly acid to neutral

## Guyton Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Drainage class:* Poorly drained
*Permeability class:* Slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bernaldo soils have fine-loamy control sections, and occur on slightly higher positions.
- Erno soils are well drained and have a fragipan.
- Gallime soils have loamy surface greater than 20 inches.
- Mollville soils have fine-loamy control sections.
- Wrightsville soils have fine control sections.

### *Taxonomic Classification*

Fine-silty, siliceous, active, thermic Typic Glossaqualfs

### *Typical Pedon*

Guyton silt loam in an area of Gallime-Guyton complex, 0 to 2 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Farm Market 125 and Texas Highway 43 in Kildare; 1 mile south on Texas Highway 43 to pipe gate; 50 feet west on oil well access road; and 50 feet north in woods. Kildare, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 53 minutes, 39.99 seconds N., and Longitude—94 degrees, 11 minutes, 8.14 seconds W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2), silt loam; weak fine subangular blocky structure; friable; very strongly acid; clear smooth boundary.
Eg—3 to 8 inches; grayish brown (10YR 5/2), silt loam; weak fine subangular blocky structure; friable; few fine and few medium pores; 10 percent coarse and medium prominent strong brown (7.5YR 5/6) masses of oxidized iron very strongly acid; clear smooth boundary.
Btg/E1—8 to 19 inches; 70 percent grayish brown (10YR 5/2) and 20 percent light brownish gray (10YR 6/2), silt loam; weak fine subangular blocky structure; firm; 5 percent clay films; 10 percent medium and coarse prominent strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; gradual wavy boundary.
Btg/E2—19 to 31 inches; 70 percent grayish brown (10YR 5/2), silty clay loam and 29 percent light brownish gray (10YR 6/2), silt loam; weak fine subangular blocky structure; firm; few fine and few medium pores; 5 percent clay films; 1 percent

medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; 10 percent crawfish krotovinas; moderately acid; gradual irregular boundary.

Btg/E3—31 to 55 inches; 65 percent grayish brown (10YR 5/2), silty clay loam and 10 percent light brownish gray (10YR 6/2), silt loam; weak fine subangular blocky structure; firm; 5 percent clay films; 25 percent medium and coarse prominent strong brown (7.5YR 5/6) masses of oxidized iron; 10 percent crawfish krotovinas; moderately acid; gradual irregular boundary.

Btg/E4—55 to 60 inches; 55 percent light olive brown (2.5Y 5/6), and 45 percent grayish brown (2.5Y 5/2), silt loam; weak fine subangular blocky structure; firm; 5 percent clay films; common medium and coarse light brownish gray (10YR 6/2) iron depletions; slightly acid; gradual irregular boundary.

BCg—60 to 80 inches; 60 percent grayish brown (2.5Y 5/2) and 40 percent light olive brown (2.5Y 5/6), sandy clay loam; weak fine subangular blocky structure; friable; 1 percent clay bridging between sand grains; slightly acid.

### *Range in Characteristics*

*Solum thickness:* 50 to about 80 inches
*Sand content in the control section*: 10 to 40 percent and is dominantly very fine in size
*Exchangeable sodium*: Less than 5 percent to 40 percent in the lower part of the solum

**A horizon**

*Hue:* 10YR or 2.5Y
*Value:* 3 to 6
*Chroma:* 2 or 3
*Color features*: Some horizons with value of 3, are less than 6 inches thick
*Texture:* Silt loam
*Reaction:* Extremely acid to moderately acid

**Eg horizon**

*Hue:* 10YR or 2.5Y
*Value:* 5 to 8
*Chroma*: 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from few to many
*Texture:* Silt loam
*Reaction:* Extremely acid to moderately acid

**Btg/E horizon**

*Hue:* Btg—10YR or 2.5Y; E—10YR or 2.5Y
Value: Btg—5 to 6; E—5 to 8
Chroma: Btg—1 to 6; E—1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Bt—silt loam, silty clay loam, or clay loam; E—silt loam
*Reaction:* Extremely acid to slightly acid

**BCg horizon**

*Hue:* 10YR or 2.5Y
*Value*: 5 to 8
*Chroma*: 1 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from few to many
*Texture:* Silt loam, silty clay loam, or sandy clay loam
*Reaction:* Extremely acid to slightly acid

## Hainesville Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread
*Parent material*: Sandy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Somewhat excessively drained
Permeability class*:* Rapid
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bernaldo soils have loamy argillic horizons.
- Gallime soils have loamy argillic horizons.
- Latch soils have loamy argillic horizons.
- Mollville soils have loamy argillic horizons.

### *Taxonomic Classification*

Thermic, coated Lamellic Quartzipsamments

### *Typical Pedon*

Hainesville fine sand (fig. 20) in an area of Hainesville fine sand, 0 to 2 percent slopes; located from the intersection of U.S. Highway 59 and Farm Market 1324 (north of Jefferson); 1.5 miles south on U.S. Highway 59 to private road; 700 feet west on road; and 200 feet south on sandpit wall. Jefferson, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 47 minutes, 25.33 seconds N., and Longitude—94 degrees, 21 minutes, 44.63 seconds W.

A1—0 to 5 inches; brown (10YR 4/3), fine sand; weak fine granular structure; very friable, loose; many fine to coarse, and common coarse roots; many fine and medium vesicular pores; strongly acid; clear wavy boundary.

A2—5 to 11 inches; dark yellowish brown (10YR 4/4), fine sand; weak fine and medium granular structure; loose; many fine, common medium, and few coarse roots; many fine and medium vesicular pores; 2 percent fine and medium cylindrical black (10YR 2/1) masses of dark accumulation; strongly acid; clear wavy boundary.

E—11 to 24 inches; light yellowish brown (10YR 6/4), fine sand; weak medium granular structure; loose; many fine and medium, and few coarse roots; many fine and medium vesicular pores; 2 percent fine and medium cylindrical gray (10YR 6/1) masses of dark accumulation; strongly acid; gradual wavy boundary.

Bw—24 to 41 inches; strong brown (7.5YR 5/6), fine sand; single grain; loose; common fine and medium, and few coarse roots; many fine vesicular pores; 2 percent fine and medium cylindrical black (10YR 2/1) masses of dark accumulation; 3 percent very pale brown (10YR 7/3) albic intrusions; strongly acid; gradual wavy boundary.

Bw/E—41 to 63 inches; 92 percent strong brown (7.5YR 5/6), fine sand; single grain; loose; common fine and medium, and few coarse roots; many fine vesicular pores; 7 percent faint brown (7.5YR 4/4) clay bridging between sand grains; 8 percent very pale brown (10YR 7/3) fine sand E material; 5 to 7 percent lamellae, 3 to 5 millimeters thick and 7 to 10 millimeters across; strongly acid; gradual wavy boundary.

**Figure 20.—Profile of Hainesville fine sand, 0 to 2 percent slopes. Lamellae can be seen at a depth of about 63 inches. Lamellae are thin strata of fine sandy loam and trap water and nutrients from the fine sand above.**

E and Bw1—63 to 76 inches; light yellowish brown (10YR 6/4), fine sand; single grain; loose; common fine and medium, and few coarse roots; common fine vesicular pores; 10 percent by volume lamellae; 14 percent faint brown (7.5YR 4/4) clay bridging between sand grains; 10 percent strong brown (7.5YR 5/6) albic intrusions; strongly acid; gradual wavy boundary.

E and Bw2—76 to 80 inches; 90 percent light yellowish brown (10YR 6/4) and 10 percent strong brown (7.5YR 5/6), fine sand; single grain; loose; common fine and medium, and few coarse roots; common fine vesicular pores; 14 percent faint brown (7.5YR 4/4) clay bridging between sand grains; 15 percent Bw2 dark brown (7.5YR 4/4) fine sandy loam, lamellae, 3 to 15 millimeters wide and 30 to 80 millimeters apart; strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches

*Other features:* Lamellae are within a depth of 40 to 72 inches. The lamellae range from 0.1 to 2.5 centimeters thick, and the cumulative thickness is less than 6 inches (15 centimeters). They are in shades of red or brown with textures of loamy fine sand or fine sandy loam. These soils are dry in the moisture control section 60 to 90 cumulative days in most years. Rounded quartzite or ironstone pebbles range from very few to about 3 percent in most pedons.

*Reaction:* Very strongly acid to slightly acid throughout.

**A or Ap horizon:**

*Hue:* 7.5YR or 10YR
*Value:* 3 to 6
*Chroma:* 3 or 4
*Texture:* Fine sand

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 8
*Chroma:* 3 or 4
*Texture:* Fine sand

**B/E or E/B horizon (where present)**

*Hue:* B part—5YR to 10YR; E part—7.5YR or 10YR
*Value:* B part—5 to 7; E part—5 to 8
*Chroma:* B part—6 or 8; E part—3 or 4
*Texture:* Fine sand or loamy fine sand

**Bw, E, and Bw horizons**

*Hue:* 5YR to 10YR
*Value:* 5 to 7
*Chroma:* 4 to 8
*Texture:* Fine sand or loamy fine sand

## Hannahatchee Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Iulus soils have coarse-loamy control sections.
- Mantachie soils are poorly drained, and occur in lower positions.

### *Taxonomic Classification*

Fine-loamy, siliceous, active, thermic Dystric Fluventic Eutrudepts

### *Typical Pedon*

Hannahatchee fine sandy loam in an area of Hannahatchee fine sandy loam, occasionally flooded; located from the intersection of Texas Highway 11 and Texas Highway 49 (Hughes Springs); 3.3 miles south on Texas Highway 49 to County 2985; 1.2 miles west on CR 2985 to (McCord) gate; 0.1 mile north on private road; 0.2 mile east on farm road; 0.2 mile east across pasture to creek; and 75 feet northeast in pasture. Avinger, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 57 minutes, 36.40 seconds N., and Longitude—94 degrees, 34 minutes, 56.20 seconds W.

Ap—0 to 15 inches; reddish brown (5YR 4/4), fine sandy loam; weak fine and medium subangular blocky structure; friable; few very fine to medium roots; few fine and medium pores; 1 percent wormcasts; few black charcoal pieces; few clean sand grains along root channels; moderately acid; gradual smooth boundary.

Bw1—15 to 29 inches; yellowish red (5YR 4/6), loam; weak medium subangular blocky structure; friable; few fine and medium roots; few medium and coarse pores; 1 percent wormcasts; few black charcoal pieces; few clean sand grains along roots; moderately acid; gradual smooth boundary.

Bw2—29 to 49 inches; yellowish red (5YR 5/6), sandy clay loam; moderate medium subangular blocky structure; firm; few medium roots; few fine to coarse pores; 1 percent fine faint pale brown (10YR 6/3) iron depletions; few black charcoal pieces (dead roots); few clean sands along roots; moderately acid; gradual smooth boundary.

Bw3—49 to 57 inches; yellowish red (5YR 5/6), sandy clay loam; moderate medium subangular blocky structure; firm; 2 percent medium and coarse yellow (10YR 7/6) ironstone nodules; 1 percent fine and medium iron-manganese concretions; 1 percent fine and medium distinct pale brown (10YR 6/3) iron depletions; few black charcoal pieces; moderately acid; clear smooth boundary.

Bw4—57 to 64 inches; strong brown (7.5YR 5/6) and yellowish red (5YR 5/6), sandy clay loam; weak medium subangular blocky structure; firm; 2 percent medium distinct light brownish gray (10YR 6/2) iron depletions; 1 percent fine and medium iron-manganese concretions; moderately acid; clear smooth boundary.

Bw5—64 to 80 inches; strong brown (7.5YR 5/6), sandy clay loam; weak medium subangular blocky structure; firm; 5 percent fine and medium iron-manganese concretions; 2 percent medium and coarse faint light brownish gray (10YR 6/2) iron depletions; 1 percent medium prominent reddish brown (5YR 5/4) ironstone nodules; 5 percent fine and medium; moderately acid.

#### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 18 to 25 percent
*Concentrated minerals:* Base saturation is 60 percent or greater in some subhorizon at a depth of 10 to 30 inches. Organic carbon ranges from 0.2 to 0.4 percent at a depth of 50 inches below the soil surface. Ironstone pebbles and iron-manganese concretions range from 0 to 5 percent throughout.

**A horizon**

*Hue:* 5YR to 10YR
*Value:* 3 or 4
*Chroma:* 2 to 8
*Texture:* Fine sandy loam
*Reaction:* Moderately acid to neutral

**Bw horizon**

*Hue:* 2.5YR to 7.5YR
*Value:* 3 to 5
*Chroma:* 4 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to common at a depth of 40 to 60 inches
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common at a depth of 40 to 60 inches
*Texture:* Loam, fine sandy loam, sandy clay loam, or clay loam
*Reaction:* Moderately acid to neutral

## Iulus Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands

*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Moderately well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bowie soils have argillic horizons, and occur on uplands.
- Cuthbert soils have argillic horizons, and occur on uplands.
- Cypress soils are very poorly drained, and occur in oxbows.
- Hannahatchee soils have fine-loamy family texture.
- Kirvin soils have argillic horizons, and occur on uplands.
- Lilbert soils have argillic horizons, and occur on uplands.
- Manco soils have fine-silty control sections.
- Mantachie soils are poorly drained, and occur on lower positions.
- Socagee soils are poorly drained and have fine-silty control sections.
- Tenaha soils have argillic horizons, and occur on uplands.

### *Taxonomic Classification*

Coarse-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts

### *Typical Pedon*

Iulus fine sandy loam in an area of Iulus fine sandy loam, frequently flooded, in hayland; located from the intersection of Texas Highway 49 and Farm Road 134 in Jefferson, Texas; 3 miles east on Texas Highway 49; 2.3 miles north on Farm Road 248; and 125 feet west in meadow. Jefferson, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 49 minutes, 21.72 seconds N., and Longitude—94 degrees, 19 minutes, 2.05 seconds W.

A—0 to 8 inches; dark grayish brown (10YR 4/2), fine sandy loam; weak fine and medium granular structure; friable, slightly hard; many fine and medium, and common coarse roots; common fine tubular pores; few medium distinct strong brown (7.5YR 4/6) ironstone pebbles; strongly acid; gradual smooth boundary.

Bw1—8 to 15 inches; 60 percent dark yellowish brown (10YR 4/4), 20 percent yellowish brown (10YR 5/4), and 10 percent yellowish brown (10YR 5/6), fine sandy loam; weak fine and medium subangular blocky structure; friable, slightly hard; common fine and medium, and few coarse roots; common fine and medium tubular and few coarse tubular pores; 10 percent medium faint grayish brown (10YR 5/2) iron depletions; very strongly acid; clear wavy boundary.

Bw2—15 to 24 inches; 55 percent yellowish brown (10YR 5/4), 10 percent dark yellowish brown (10YR 4/4), and 10 percent yellowish brown (10YR 5/6), fine sandy loam; weak fine and medium subangular blocky structure; friable, slightly hard; common fine and medium, and few coarse roots; common fine and medium tubular and common coarse tubular pores; 3 percent faint yellowish brown (10YR 5/8) iron stains; 25 percent faint grayish brown (10YR 5/2) iron depletions; 1 percent fine and medium spherical wormcasts; very strongly acid; clear wavy boundary.

Bw3—24 to 37 inches; 40 percent yellowish brown (10YR 5/6), 20 percent yellowish brown (10YR 5/4), and 10 percent strong brown (7.5YR 5/6), fine sandy loam; weak fine and medium subangular blocky structure; friable, slightly hard; common

fine, few medium, and few coarse roots; common fine tubular and few medium tubular and few coarse tubular pores; 30 percent faint grayish brown (10YR 5/2) iron depletions; 1 percent fine and medium spherical iron-manganese concretions; very strongly acid; clear wavy boundary.

Bg—37 to 53 inches; 90 percent light brownish gray (10YR 6/2), very fine sandy loam; weak coarse subangular blocky structure; very friable, slightly hard; common fine, few medium, and few coarse roots; common fine, few medium, and few coarse tubular pores; 5 percent distinct yellowish brown (10YR 5/6) ironstone nodules; 3 percent distinct strong brown (7.5YR 5/6) ironstone nodules; 2 percent distinct dark yellowish brown (10YR 3/4) ironstone nodules; 2 percent fine and medium spherical iron-manganese concretions; 1 percent fine and medium spherical ironstone nodules; 1 percent coarse spherical iron-manganese concretions; very strongly acid; clear wavy boundary.

B’w1—53 to 64 inches; 60 percent dark yellowish brown (10YR 4/6) and 20 percent yellowish brown (10YR 5/6), fine sandy loam; weak coarse subangular blocky structure; very friable, slightly hard; few fine roots; few fine and medium tubular pores; 20 percent distinct light brownish gray (10YR 6/2) iron depletions; 8 percent medium and coarse spherical iron-manganese concretions; very strongly acid; clear wavy boundary.

B’w2—64 to 80 inches; 50 percent yellowish brown (10YR 5/4) and 20 percent yellowish brown (10YR 5/6), fine sandy loam; 30 percent faint light brownish gray (10YR 6/2) mottles; weak coarse subangular blocky structure; very friable, slightly hard; common fine and medium tubular pores; 30 percent faint light brownish gray (10YR 6/2) iron depletions; 2 percent medium spherical iron-manganese concretions; very strongly acid.

### ***Range in Characteristics***

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 10 to 18 percent
*Redoximorphic features:* Iron depletions are within a depth of 24 inches
*Other features:* Thickness of the loamy alluvial sediments ranges from 7 to 14 feet. These soils are dry in some parts in the moisture control section for more than 60 cumulative days in most years.
*Reaction:* Extremely acid to moderately acid throughout.

#### A horizon

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 2 to 4
*Redoximorphic concentrations:* Some pedons have few fine iron concentrations in shades of brown
*Redoximorphic depletions:* Some pedons have few fine iron depletions in shades of gray
*Texture:* Fine sandy loam

#### Bw horizon

*Hue:* 7.5YR or 10YR
*Value:* 4 or 5
*Chroma:* 3 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many
*Texture:* Fine sandy loam or loam in the upper part, but ranges to sandy clay loam in the lower part of some pedons, or it is stratified with these textures. Some pedons have thin subhorizons that are silt loam, very fine sandy loam, or loamy fine sand.

**Bg horizon**

*Hue:* 7.5YR or 10YR
*Chroma: 2* to 6
*Value:* 3 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many. Some pedons are variegated with these colors.
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many. Some pedons are variegated with these colors.
*Texture:* Fine sandy loam, very fine sandy loam, loam, silt loam, or sandy clay loam. Most pedons have more than one texture and some pedons have thin strata of loamy fine sand.
*Other features:* Layers with more than 18 percent clay are common in the lower part.

## Kildare Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area*: East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature*: Closed depression
*Parent material*: Loamy alluvium
*Geology*: Alluvium
*Drainage class*: Very poorly drained
*Permeability class*: Very slow
*Soil depth class*: Moderately deep to a fragipan layer
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Erno and similar soils occurring as mounds.

### *Taxonomic Classification*

Fine-loamy, siliceous, active, thermic Typic Fragiaquults

### *Typical Pedon*

Kildare silt loam (fig. 21) in an area of Mollville-Kildare complex, 0 to 1 percent slopes; in intermixed conifers and hardwoods; located from the intersection of U.S. Highway 59 and Texas Highway 125, 12 miles southeast on Texas Highway 125 to Texas Highway 43, 3,500 feet south on Texas Highway 43, and 200 feet west of road. Kildare, Texas USGS 7.5 Minute Quadrangles; Latitude—32 degrees, 53 minutes, 55.58 seconds N., and Longitude—94 degrees, 11 minutes, 12.07 seconds W.

Ap—0 to 7 inches; dark brown (10YR 3/3) and very dark grayish brown (10YR 3/2), silt loam; moderate medium granular structure; friable, slightly sticky, nonplastic; many very fine and fine roots; 20 percent distinct dark grayish brown (10YR 4/2) silt coats on faces of peds; 1 percent fine distinct irregular dark brown (10YR 3/3) iron-manganese masses between peds; extremely acid; clear wavy boundary.

Eng—7 to 14 inches; grayish brown (10YR 5/2), silt loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; many very fine and fine, and common medium roots; common very fine moderate continuity dendritic tubular pores; 3 percent distinct very dark grayish brown (10YR 3/2) organic stains on faces of peds and in pores; 3 percent fine prominent cylindrical masses of oxidized iron on surfaces along pores; 5 percent medium and coarse distinct spherical dark grayish brown (10YR 4/2) wormcasts; very strongly acid; clear irregular boundary.

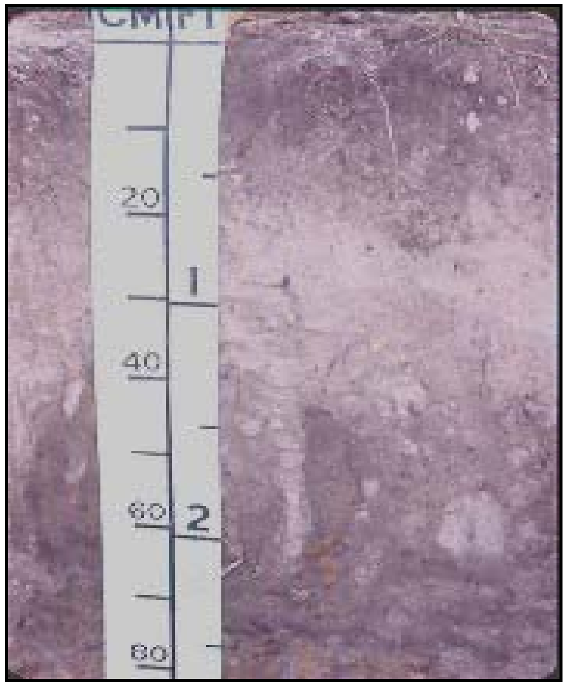


**Figure 21.—Profile of Kildare silt loam, 0 to 1 percent slopes. The fragipan starts at a depth of 30 inches. The fragipan perches water and restricts roots.**

Btng/E1—14 to 25 inches; 70 percent dark grayish brown (10YR 4/2) and 30 percent grayish brown (10YR 5/2), loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine and fine, and common medium roots between peds; common very fine moderate continuity dendritic tubular pores; 20 percent distinct very dark grayish brown (10YR 3/2) organoargillans on faces of peds and in pores; crawfish krotovinas 2 to 4 centimeters wide that are filled with albic material from the E horizon, and which contain 10YR 4/2 cups that extend through this horizon and occupy about 30 percent of the volume (E parts); very strongly acid; abrupt smooth boundary.

Btng/E2—25 to 30 inches; 70 percent dark grayish brown (10YR 4/2) and 20 percent grayish brown (10YR 5/2), loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine and fine roots between peds; common very fine moderate continuity dendritic tubular pores; 25 percent distinct very dark grayish brown (10YR 3/2) organoargillans on faces of peds and in pores; 15 percent medium and coarse distinct irregular brown (7.5YR 4/4) and strong brown (7.5YR 4/6) masses of oxidized iron on ped faces and pores; crawfish krotovinas 2 to 4 centimeters wide that are filled with albic material from the E horizon, and which contain 10YR 4/2 cups that extend through this horizon and occupy about 20 percent of the volume (E parts); very strongly acid; gradual wavy boundary.

Btxng—30 to 36 inches; dark grayish brown (10YR 4/2), loam; weak very coarse prismatic structure; extremely firm; few very fine and fine roots in cracks; common very fine and fine low continuity vesicular and tubular pores; 10 percent distinct very dark grayish brown (10YR 3/2) organoargillans on faces of peds and in pores; 10 percent medium and coarse distinct irregular strong brown (7.5YR 4/6) masses of oxidized iron between peds; 95 percent brittle peds; very strongly acid; gradual wavy boundary.

Btxg/E—36 to 42 inches; 60 percent dark grayish brown (10YR 4/2), loam; weak very coarse prismatic structure; extremely firm; common very fine and fine low continuity vesicular and tubular pores; 7 percent distinct very dark grayish brown (10YR 3/2) and dark grayish brown (10YR 4/2) organoargillans on faces of peds and in pores; 20 percent faint grayish brown (10YR 5/2) silt coats on faces of peds; 13 percent medium and coarse prominent irregular dark yellowish brown (10YR 4/6) and dark yellowish brown (10YR 4/4) masses of oxidized iron on ped faces and pores; 4 percent medium and coarse prominent irregular reddish brown (5YR 4/4) masses of oxidized iron on ped faces and pores; 95 percent brittle peds in both the Btxg and E parts; very strongly acid; abrupt smooth boundary.

Btxg—42 to 45 inches; light brownish gray (10YR 6/2), fine sandy loam; weak medium and coarse subangular blocky structure; very firm; 5 percent distinct dark grayish brown (10YR 4/2) organoargillans on faces of peds; 7 percent medium and coarse prominent irregular yellowish brown (10YR 5/4) and yellowish brown (10YR 5/6) masses of oxidized iron throughout; 60 percent brittle peds; strongly acid; clear wavy boundary.

C1—45 to 67 inches; pale brown (10YR 6/3), loamy fine sand; structureless; 15 percent medium and coarse irregular yellowish brown (10YR 5/4) and yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; diffuse.

C2—67 to 85 inches; pale brown (10YR 6/3), loamy fine sand; structureless; loose, nonsticky, nonplastic; 30 percent coarse and very coarse prominent irregular yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 40 to 60 inches
*Thickness of the ochric epipedon:* 10 to 20 inches
*Depth to fragipan:* 25 to 40 inches
*Bioturbation:* Ranges from 20 to 40 percent in the horizons above the fragipan
*Clay content in the control section:* 15 to 30 percent
*Reaction:* Extremely acid to neutral throughout

**A horizon**

*Hue*: 10YR
*Value*: 3 to 6
*Chroma*: 1 to 3
*Texture*: Silt loam, very fine sandy loam, or loam.
Redoximorphic concentration: 0 to 10 percent in shades of brown or yellow

**Eg or Eng horizon**

*Hue*: 7.5YR or 10YR
*Value*: 5 to 7
*Chroma*: 1 or 2
*Redoximorphic concentrations*: 5 to 20 percent in shades of brown or yellow
*Texture*: Silt loam, loam, or very fine sandy loam
*Exchangeable sodium percentage (ESP):* 2 to 20 percent

**Btng/E horizon**

*Hue*: Btng part—7.5YR or 10YR; E part—10YR
*Value*: Btng part—4 to 6; E part—5 to 7
*Chroma*: Btng part—1 or 2; E part—2 or 3
*Redoximorphic concentrations*: 0 to 25 percent in shades of red, yellow, or brown
*Texture*: Btng part—silt loam, loam, silty clay loam, or clay loam; E part—comprises 10 to 40 percent of the horizon.

*Exchangeable sodium percentage (ESP)*: 15 percent or more
*Sodium adsorption ratio (SAR)*: 13 percent or more in one or more subhorizons of the Btg/E horizon

**Btxg/E, Btxng/E, or Btxg horizon**

*Hue*: Btx part—7.5YR or 10YR; E part—10YR
*Value*: Btx part—4 to 6; E part—5 to 7
*Chroma*: Btx part—1 or 2; E part—1 or 2
*Redoximorphic concentrations*: 2 to 25 percent in shades of brown or yellow
*Texture*: Btx part—silt loam, loam, silty clay loam, or clay loam; E part—very fine sandy loam, silt loam, or loam
*Other features*: E parts range from 15 to 25 percent of the horizon. The horizon is extremely firm and brittle in 60 to 95 percent of the cross-section.
*Exchangeable sodium percentage (ESP)*: 2 to 20 percent

**Btgx or BC horizon (where present)**

*Hue*: 7.5YR or 10YR
*Value*: 5 or 6
*Chroma*: 1 or 2
*Redoximorphic concentrations*: 5 to 20 percent in shades of red, yellow, or brown
*Redoximorphic depletions*: 0 to 5 percent in shades of gray
*Texture*: Fine sandy loam, silt loam, or loam
*Other features*: Where there are fragic properties present, the horizon is very firm and brittle in 30 to 70 percent of the cross-section.

**C or 2C horizon:**

*Hue*: 7.5YR or 10YR
*Value*: 5 or 6
*Chroma*: 2 to 4
*Redoximorphic concentrations*: 5 to more than 30 percent, medium to very coarse, in shades of brown
*Redoximorphic depletions*: 0 to 5 percent in shades of gray
*Texture*: Loamy fine sand, fine sand, very fine sandy loam, silt loam, or fine sandy loam

## Kirvin Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Geology*: Reklaw Formation
*Drainage class:* Well drained
*Permeability class:* Moderately slow
*Soil depth class:* Deep to densic material
*Shrink-swell potential*: Moderate
*Slope*: 1 to 8 percent

***Associated Soils***

- Bowie soils have fine-loamy control sections.
- Briley soils have loamy surfaces more than 20 inches.

- Cuthbert soils have 20- to 40-inch sola and occur on side slopes.
- Darco soils have loamy surfaces more than 40 inches.
- Elrose soils have fine-loamy control sections.
- Iulus soils have coarse-loamy control sections.
- Kullit soils have fine-loamy control sections.
- Lilbert soils have loamy surfaces more than 20 inches.
- Redsprings soils have base saturation more than 35 percent.
- Sacul soils have gray mottles in upper argillic horizon.
- Sailes soils have fine-loamy control section.
- Tenaha soils have sandy surface 20 to 40 inches.

### *Taxonomic Classification*

Fine, mixed, semiactive, thermic Typic Hapludults

### *Typical Pedon*

Kirvin very fine sandy loam in an area of Kirvin very fine sandy loam, 2 to 5 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Farm Market 727 and Texas Highway 49 in Gray; 1.2 miles northwest on Texas Highway 49; 50 feet north on county road; and 30 feet east along highline on north. Trees, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 47 minutes, 42.12 seconds N., and Longitude—94 degrees, 5 minutes, 28.14 seconds W.

A—0 to 6 inches; brown (7.5YR 4/4), very fine sandy loam; weak fine subangular blocky structure; friable, slightly hard; few fine granular ironstone fragments; strongly acid; abrupt smooth boundary.

Bt1—6 to 17 inches; red (2.5YR 4/6), clay; moderate fine and medium subangular blocky structure; firm, hard; common distinct clay films; 1 percent fine granular ironstone fragments; strongly acid; clear smooth boundary.

Bt2—17 to 28 inches; red (2.5YR 4/6), clay; 10 percent fine distinct yellowish brown (10YR 5/6) mottles; moderate fine and medium subangular blocky structure; firm, hard; common distinct clay films; very strongly acid; clear wavy boundary.

Bt3—28 to 43 inches; red (2.5YR 5/6), clay; 30 percent medium prominent light brownish gray (10YR 6/2) and 10 percent medium distinct yellowish brown (10YR 5/6) mottles; moderate fine and medium subangular blocky structure; firm, hard; common distinct clay films; thin lenses of ironstone; mica flakes throughout; few shale fragments; very strongly acid; clear smooth boundary.

BCt—43 to 51 inches; red (2.5YR 5/6), clay loam; 30 percent coarse prominent yellowish brown (10YR 5/6), and 10 percent coarse distinct yellowish brown (10YR 5/6) mottles; weak medium platy structure; firm, hard; few distinct clay films; few thin lenses of ironstone; common shale fragments; very strongly acid; clear smooth boundary.

Cd—51 to 80 inches; 55 percent strong brown (7.5YR 5/6) and 45 percent light gray (10YR 7/2), stratified clay loam; platy structure; firm, hard; thin lenses of ironstone 0.5 to 2.0 centimeters thick; stratified sandstone and shale; extremely acid.

### *Range in Characteristics*

*Solum thickness:* 40 to 60 inches

*Clay content in the control section:* 40 to 60 percent

*Redoximorphic features:* Yellow or brown iron concentrations, and gray relict iron depletions are in the lower part of the solum in some pedon

*Concentrated minerals:* Ironstone and sandstone fragments less than 1 to 3 inches across the long axis range from about 1 to 50 percent in the A horizon and from 0 to 15 percent by volume in the B and C horizons. Coarse fragments 3 to 24 inches

across are on or imbedded in the surface layer of some pedons. These cover less than 1 percent of surface area.

**A horizon**

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 2 to 4
*Color features:* Some pedons have hue of 5YR, value of 4 or 5, and chroma of 5 to 6.
*Texture:* Gravelly fine sandy loam, very fine sandy loam, or fine sandy loam. A graded phase which also includes sandy clay loam and clay loam surface textures is recognized.
*Reaction:* Very strongly acid to slightly acid, unless limed

**E horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 2 to 4
*Color features*: Some pedons have hue of 5YR, value of 4 or 5, and chroma of 5 to 6.
*Texture:* Fine sandy loam, very fine sandy loam, or their gravelly counterparts
*Reaction:* Very strongly acid to slightly acid, unless limed

**Bt horizon**

*Hue:* 2.5YR or 5YR
*Value:* 3 to 5
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from none to common
*Redoximorphic depletions:* Relict iron depletions in shades of gray are in the lower part in some pedons
*Texture:* Clay, sandy clay, or clay loam
*Other features:* Gray platy shale fragments are in the lower part of some pedons.
*Reaction:* Extremely acid to strongly acid

**BCt or BtC horizon**

*Colors: Shades of red, yellow, or brown in the sandstone materials, and shades of gray in the shale materials*
*Texture:* Sandy clay loam, clay loam, or clay
*Other features:* Thin strata and fragments of sandstone or shale materials range from none to common
*Reaction:* Extremely acid or very strongly acid

**Cd horizon**

*Colors:* Shades of red, yellow, or brown in the sandstone materials, and shades of gray in the shale materials.
*Texture:* Clay loam. The amount of sandstone or shale material is variable and one or the other may be absent in some pedons.
*Other features:* Roots penetrate the materials but are concentrated along fractures or cleavage planes. A few mica flakes are in most pedons typically between plates of shale. Most pedons have clay flows along vertical fractures. Many pedons have discontinuous, fractured, strongly cemented or indurated sandstone layers about 1 to 4 inches thick. They appear to have the slope of an ancient surface gradient, and occur within the argillic horizon of some pedons.
*Reaction:* Extremely acid to strongly acid

## Kullit Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Moderately well drained
*Permeability class:* Moderately slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bowie soils have more than 5 percent plinthite.
- Eylau soils have fragic properties in the argillic horizon.
- Kirvin soils have clayey control sections.
- Sailes soils have red argillic horizons, and occur on higher positions.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Aquic Paleudults

### *Typical Pedon*

Kullit very fine sandy loam in an area of Kullit very fine sandy loam, 0 to 2 percent slopes; located from the intersection of Farm Market 2208 and Farm Market 3001 (southwest of Jefferson); 300 feet northwest on Farm Road 3001; and 300 feet west in pasture. Marshall NW, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 42 minutes, 17.51 seconds N., and Longitude—94 degrees, 26 minutes, 43.41 seconds W.

Ap—0 to 7 inches; brown (10YR 4/3), very fine sandy loam; 3 percent fine faint dark yellowish brown (10YR 4/4) mottles; weak fine granular structure; moderately acid; clear smooth boundary.

E—7 to 13 inches; light yellowish brown (10YR 6/4), very fine sandy loam; 1 percent fine faint yellowish brown (10YR 5/6) mottles; weak fine granular structure; slightly acid; clear wavy boundary.

Bt1—13 to 23 inches; yellowish brown (10YR 5/6), clay loam; weak fine and medium subangular blocky structure; few faint clay films; 3 percent medium prominent yellowish red (5YR 4/6) masses of oxidized iron; 1 percent fine faint light brownish gray (10YR 6/2) iron depletions; strongly acid; clear wavy boundary.

Bt2—23 to 36 inches; yellowish brown (10YR 5/6), clay loam; moderate fine and medium subangular blocky structure; few faint clay films; 3 percent distinct pale brown (10YR 6/3) skeletans in root channels and/or pores; 20 percent medium prominent red (2.5YR 4/6) masses of oxidized iron; 3 percent fine distinct light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

Bt3—36 to 49 inches; red (2.5YR 4/6), clay loam; moderate medium subangular blocky structure; few faint clay films; 6 percent coarse distinct yellowish brown (10YR 5/6) masses of oxidized iron; 20 percent coarse prominent light brownish gray (10YR 6/2) iron depletions; very strongly acid; clear wavy boundary.

2Btg1—49 to 63 inches; light brownish gray (10YR 6/2), clay; moderate fine and medium subangular blocky structure; few faint clay films; 20 percent coarse prominent red (2.5YR 4/6) masses of oxidized iron; 6 percent medium distinct

yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

2Btg2—63 to 80 inches; light brownish gray (10YR 6/2), clay; weak fine and medium subangular blocky structure; few faint clay films; 3 percent medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; 3 percent coarse prominent red (2.5YR 4/6) masses of oxidized iron; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches

**A horizon**

*Hue:* 10YR
*Value:* 4 or 5
*Chroma:* 2 or 3
*Texture:* Very fine sandy loam
*Reaction:* Strongly acid to slightly acid

**E horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 3 to 6
*Texture:* Fine sandy loam, loam, or very fine sandy loam
*Reaction:* Strongly acid to slightly acid

**Bt1 horizon (upper part)**

*Hue:* 5YR to 10YR
*Value:* 4 to 6
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common
*Texture:* Loam, sandy clay loam, or clay loam
*Reaction:* Very strongly acid or strongly acid

**Bt horizon (lower part)**

*Hue:* 2.5YR to 10YR
*Value:* 4 or 5
*Chroma:* 6 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common
*Texture:* Loam, sandy clay loam, or clay loam
*Reaction:* Very strongly acid or strongly acid

**2Btg horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 1 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common
*Texture:* Clay or sandy clay with pockets of coarser materials.
*Reaction:* Very strongly acid or strongly acid

## Latch Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Pimple mound
*Geomorphic component*: Tread
*Parent material*: Sandy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Moderately well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bernaldo soils have fine-loamy control sections.
- Gallime soils are fine-loamy on similar positions.
- Hainesville soils are sandy throughout.
- Mantachie soils are fine-loamy and on flood plains.
- Mollville soils are fine-loamy, and are poorly drained.
- Wrightsville soils are fine, and are poorly drained.

### *Taxonomic Classification*

Loamy, siliceous, semiactive, thermic Grossarenic Paleudalfs

### *Typical Pedon*

Latch loamy fine sand in an area of Latch-Mollville complex, 0 to 2 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 49 and Farm Market 134 in Jefferson; 0.9 mile southeast on Farm Market 134; and 0.1 mile north in woods. Jefferson, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 45 minutes, 5.20 seconds N., and Longitude—94 degrees, 20 minutes, 16.60 seconds W.

A—0 to 5 inches; brown (10YR 4/3), loamy fine sand; weak fine granular structure; very friable, loose; many fine to coarse roots; moderately acid; clear wavy boundary.

E1—5 to 16 inches; brown (10YR 5/3), fine sand; single grain; very friable, loose; many fine and medium, and common coarse roots; strongly acid; clear smooth boundary.

E2—16 to 33 inches; yellowish brown (10YR 5/4), fine sand; 1 percent fine faint pale brown (10YR 6/3) mottles; single grain; very friable, loose; many fine to coarse roots; 8 percent fine and medium spherical extremely weakly cemented iron-manganese masses; strongly acid; clear wavy boundary.

E3—33 to 56 inches; light yellowish brown (10YR 6/4), fine sand; single grain; very friable, loose; common fine and medium, and common coarse roots; 10 percent medium faint light brownish gray (10YR 6/2) iron depletions; 10 percent fine and medium spherical extremely weakly cemented iron-manganese masses; 5 percent medium and coarse spherical extremely weakly cemented iron-manganese masses; 1 percent fine distinct yellowish brown (10YR 5/6) ironstone nodules; strongly acid; abrupt smooth boundary.

Bt—56 to 69 inches; yellowish brown (10YR 5/6), fine sandy loam; moderate fine and medium subangular blocky structure; friable, slightly hard; common fine and common medium roots; common very fine and fine vesicular pores; few faint

yellowish brown (10YR 5/6) clay films on faces of peds and in pores; 20 percent medium distinct grayish brown (10YR 5/2) iron depletions; 10 percent fine prominent red (2.5YR 4/6) ironstone nodules; 1 percent fine and medium irregular iron-manganese masses between peds; very strongly acid; clear wavy boundary.

Btg1—69 to 75 inches; light brownish gray (10YR 6/2), loam; moderate fine and medium subangular blocky structure; friable, slightly hard; common fine roots; common very fine and fine vesicular pores; 2 percent faint light gray (10YR 7/2) skeletans on faces of peds and in pores; few faint gray (10YR 6/1) clay films on faces of peds and in pores; 25 percent medium prominent red (2.5YR 4/6) ironstone nodules; 15 percent medium distinct yellowish brown (10YR 5/6) ironstone nodules; 5 percent fine prominent yellowish red (5YR 5/8) ironstone nodules; 4 percent fine and medium irregular iron-manganese masses between peds; very strongly acid; clear wavy boundary.

Btg2—75 to 80 inches; grayish brown (10YR 5/2), clay loam; weak medium subangular blocky structure; friable, slightly hard; common fine roots; common very fine and fine vesicular pores; 3 percent faint light brownish gray (10YR 6/2) skeletans on faces of peds and in pores; few faint gray (10YR 6/1) clay films on faces of peds and in pores; 15 percent medium distinct yellowish brown (10YR 5/6) ironstone nodules; 8 percent fine prominent yellowish red (5YR 5/8) ironstone nodules; 3 percent fine and medium irregular iron-manganese masses between peds; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* 60 to more than 80 inches
*Clay content in the control section:* 18 to 35 percent
*Concentrated minerals:* Some pedons contain a few dark concretions 2 to 6 millimeters in diameter.

#### A horizon

*Hue:* 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 2 to 4
*Redoximorphic depletions:* Some pedons have a few gray iron depletions
*Texture:* Loamy fine sand
*Reaction*: Very strongly acid to slightly acid, unless limed

#### E horizon

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 3 or 4
*Redoximorphic features:* Gray iron depletions or brown iron concentrations range from none to common in the upper part, and from few to many in the lower part of the horizon.
*Texture:* Loamy fine sand or fine sand
*Reaction:* Very strongly acid to slightly acid

#### Bt horizon

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 2 to 8
*Color features:* Is variegated with these colors as well as yellow or red hues
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to many
*Texture:* Sandy clay loam, clay loam, or fine sandy loam

*Other features:* Most pedons have streaks and pockets of uncoated sand that range from a few to less than 15 percent by volume.
*Reaction:* Extremely acid to moderately acid

**Btg horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 2
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to many
*Texture:* Sandy clay loam, clay loam, or fine sandy loam
*Other features:* Most pedons have streaks and pockets of uncoated sand that range from a few to less than 15 percent by volume.
*Reaction:* Extremely acid to moderately acid

**BC or BCg horizon (where present)**

*Hue:* 10YR or 2.5Y
*Values*: 5 to 7
*Chroma:* 1 to 4
*Redoximorphic concentrations:* Iron concentrations with higher chroma than the matrix range from none to common
*Texture:* Sandy clay loam, clay loam, or fine sandy loam
*Other features:* Most pedons have streaks and pockets of uncoated sand that range from a few to less than 15 percent by volume.
*Reaction:* Extremely acid to slightly acid

## Latex Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy eolian deposits over clayey marine deposits derived from sedimentary rock
*Geology:* Wilcox Group
*Drainage class:* Moderately well drained
*Permeability class:* Slow
*Soil depth class:* Very deep
*Shrink-swell potential*: High
*Slope*: 1 to 3 percent

### *Associated Soils*

- Ashford soils have very-fine control sections.
- Bernaldo soils lack clay subhorizons, and occur on terraces.
- Eastwood soils occur on sloping stream divides or side slopes.
- Erno soils occur on similar to slightly lower positions and have a fragipan.
- Gallime soils lack clay subhorizons, and occur on terraces.
- Metcalf soils have redoximorphic depletions in upper 30 inches.
- Wrightsville soils have fine control sections, and are poorly drained.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs

### *Typical Pedon*

Latex fine sandy loam (fig. 22) in an area of Latex fine sandy loam, 1 to 3 percent slopes, in conifers; located from the intersection of Farm Market 994 and 1766 in Bryans Mill; 2.1 miles west on Farm Market 1766; 1.0 mile north and west on County Road 2585 to Indian Mound Hunting Club gate ; 0.9 mile west and north on Plantation Road; and 40 feet east in pine plantation. Marietta, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 14 minutes, 41.43 seconds N., and Longitude—94 degrees, 32 minutes, 51.17 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3), fine sandy loam; weak fine subangular blocky structure; very friable; common fine, common medium, and few coarse roots; moderately acid; clear smooth boundary.

E—5 to 12 inches; brown (10YR 5/3), fine sandy loam; weak fine and medium subangular blocky structure; very friable; common fine, common medium, and few coarse roots; strongly acid; clear smooth boundary.

Bt1—12 to 17 inches; strong brown (7.5YR 5/6), sandy clay loam; weak medium subangular blocky structure; friable; common fine and common medium roots; few faint clay films; strongly acid; gradual wavy boundary.

Bt2—17 to 28 inches; yellowish brown (10YR 5/6), sandy clay loam; weak medium subangular blocky structure; friable; common fine, few medium, and common very fine roots; few faint clay films; 10 percent medium prominent red (2.5YR 4/6) masses of oxidized iron; 10 percent fine prominent red (2.5YR 4/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bt/E—28 to 38 inches; 50 percent yellowish brown (10YR 5/8), and 38 percent red (2.5YR 4/8), sandy clay loam; weak medium and coarse subangular blocky structure; friable; common fine and common medium roots; few faint clay films; 12 percent medium distinct light brownish gray (10YR 6/2) iron depletions; 6 percent pale brown (10YR 6/3) albic material (E); very strongly acid; gradual wavy boundary.

**Figure 22.—Profile of Latex fine sandy loam, 1 to 3 percent slopes. Albic material (E) is most abundant in lower part of the profile.**

2Bt1—38 to 50 inches; 50 percent light brownish gray (10YR 6/2), 30 percent dark red (2.5YR 3/6), and 20 percent strong brown (7.5YR 5/6), clay; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine and few fine roots; common distinct clay films; very strongly acid; gradual wavy boundary.

2Bt2—50 to 62 inches; 55 percent light gray (10YR 7/2), 25 percent yellowish brown (10YR 5/8), 20 percent red (2.5YR 4/8), clay; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common distinct clay films; very strongly acid; gradual wavy boundary.

2Bt3—62 to 72 inches; 60 percent light brownish gray (10YR 6/2), 20 percent brownish yellow (10YR 6/8), and 20 percent red (2.5YR 4/8), clay; weak coarse prismatic structure parting to weak medium subangular blocky; firm; common distinct clay films; very strongly acid; gradual wavy boundary.

2BCt—72 to 80 inches; 60 percent light brownish gray (10YR 6/2), 30 percent yellowish red (5YR 5/8), and 10 percent brownish yellow (10YR 6/8), clay loam; weak medium subangular blocky structure; friable; common distinct clay films; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 18 to 35 percent
*Other features:* Petrified wood fragments less than 3 inches across range from none to few near the contact of the 2Bt horizon. A clayey discontinuity is at 36 to 60 inches deep
*Concentrated minerals:* Base saturation at a depth 50 inches below the top of the Bt horizon ranges from 35 to 60 percent.
*Reaction:* Very strongly acid to moderately acid in the A and E horizons, unless limed; very strongly acid or strongly acid in the EB, Bt, and Bt/E horizons; very strongly acid in the 2Bt, 2Bt/E, and 2Btg horizons; and extremely acid or very strongly acid in the BC horizon.

#### A horizon

*Hue:* 10YR
*Value:* 4 or 5
*Chroma:* 2 to 4
*Texture:* Fine sandy loam

#### E horizon

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 3 or 4
*Texture:* Fine sandy loam
*Other features*: Combined thickness of the A and E horizons range from 6 to 18 inches

#### Bt horizon

*Hue:* 5YR to 10YR
*Value:* 5 or 6
*Chroma:* 6 or 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from none to common
*Texture:* Loam, clay loam, or sandy clay loam
*Coarse fragments:* Ironstone pebbles range from 0 to 15 percent by volume, however some pedons have pockets 6 to 10 inches in diameter that contain up to 35 percent pebbles.

*Other features:* Streaks and pockets of albic materials range from 0 to 4 percent by volume.

**Bt/E horizon**

*Hue:* Bt part—5YR to 10YR; E part—5YR to 10YR
*Value:* Bt part—5 or 6; E part—5 to 7
*Chroma:* Bt part—6 or 8; E part—2 or 3
*Redoximorphic concentrations:* Iron concentrations in shades of red, yellow, or brown range from few to common. Some horizons have a variegated matrix of these colors.
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common. Some horizons have a variegated matrix of these colors.
*Texture:* Clay loam, loam, or sandy clay loam
*Coarse fragments:* Ironstone pebbles range from 0 to 15 percent by volume.
*Other features:* Streaks and pockets of albic materials range from 5 to 10 percent by volume. Brittle masses of iron accumulation in shades of red, dark red, or yellowish red comprise up to 25 percent by volume in some pedons.

**2Bt horizon**

*Hue:* 10R to 10YR
*Value:* 3 to 6
*Chroma:* 2 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from few to many. Some pedons have a variegated matrix with these colors.
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many. Some pedons have a variegated matrix with these colors.
*Texture:* Clay, silty clay, or clay loam with 35 to 45 percent clay
*Coarse fragments:* Ironstone pebbles range from 0 to 10 percent by volume throughout the horizon.
*Other features:* Streaks and pockets of albic materials that make up from 5 to 15 percent of the volume

**2BCt horizon**

*Hue:* 10R to 10YR
*Value:* 3 to 6
*Chroma:* 2 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from few to many. Some pedons have a variegated matrix with these colors.
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to many. Some pedons have a variegated matrix with these colors.
*Texture:* Clay, silty clay, or clay loam with 35 to 45 percent clay
*Coarse fragments:* Ironstone pebbles range from 0 to 10 percent by volume throughout the horizon.
*Other features:* Streaks and pockets of albic materials make up from 5 to 15 percent of the volume.

## Lilbert Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Well drained

*Permeability class:* Moderately slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 2 to 5 percent

### *Associated Soils*

- Ashford soils have very-fine control sections.
- Bowie soils on similar position but lack sandy surface.
- Briley soils have less than 5 percent plinthite and slightly higher.
- Darco soils have surfaces thicker than 40 inches.
- Duffern soils are sandy throughout.
- Iulus soils have coarse-loamy control sections.
- Kirvin soils have fine control section on convex ridges.
- Rentzel soils are wetter on lower concave slopes.
- Sailes soils have fine-loamy control sections.
- Tenaha soils have less than 5 percent plinthite.

### *Taxonomic Classification*

Loamy, siliceous, semiactive, thermic Arenic Plinthic Paleudults

### *Typical Pedon*

Lilbert loamy fine sand (fig. 23) in an area of Lilbert loamy fine sand, 2 to 5 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 155 and Texas Highway 729; 3.9 miles southeast on Texas Highway 729; 3.9 miles southeast on Texas 729; 0.5 mile south on Mims Chapel Boat Ramp Road; and 0.1 mile west on county road to road cut on south side. Ore City, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 49 minutes, 51.87 seconds N., and Longitude—94 degrees, 37 minutes, 42.58 seconds W.

A—0 to 7 inches; brown (10YR 5/3), loamy fine sand; weak fine granular structure; friable; many fine to coarse roots; 1 to 3 percent iron gravels; very strongly acid; clear smooth boundary.

E1—7 to 20 inches; yellowish brown (10YR 5/4), loamy fine sand; weak fine granular structure; friable; many fine to coarse roots; 1 to 3 percent iron gravels; strongly acid; gradual wavy boundary.

E2—20 to 33 inches; light yellowish brown (10YR 6/4), loamy fine sand; 3 percent medium distinct dark yellowish brown (10YR 4/6) mottles; weak fine granular structure; friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

Bt1—33 to 41 inches; yellowish brown (10YR 5/8), sandy clay loam; 1 percent medium prominent yellowish red (5YR 4/6) mottles; weak medium subangular blocky structure; friable; common fine and medium roots; few faint clay films; 8 percent plinthite nodules; very strongly acid; gradual wavy boundary.

Btv1—41 to 55 inches; yellowish brown (10YR 5/6), sandy clay loam; 4 percent medium and coarse prominent red (2.5YR 4/6) mottles; weak fine subangular blocky structure; friable; common fine and medium roots; few faint clay films; 5 percent plinthite nodules; very strongly acid; gradual wavy boundary.

Btv2—55 to 68 inches; yellowish brown (10YR 5/6), sandy clay loam; 7 percent medium prominent red (2.5YR 4/6) mottles; weak medium and coarse prismatic structure parting to weak fine and medium subangular blocky; firm; few faint clay films: 1 percent distinct pale brown (10YR 6/3) skeletans; 1 percent distinct light gray (10YR 7/2) skeletans; 5 percent plinthite nodules; very strongly acid; gradual wavy boundary.


**Figure 23.—Profile of Lilbert loamy fine sand, 2 to 5 percent slopes. Lilbert soils have a thick sandy surface over a loamy subsoil.**

Btv3—68 to 80 inches; 40 percent yellowish brown (10YR 5/6), 30 percent red (2.5YR 4/6), and 20 percent light gray (10YR 7/2), sandy clay loam; weak medium and coarse prismatic structure parting to weak fine and medium subangular blocky; firm; few faint clay films; 10 percent plinthite nodules; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* 60 to more than 80 inches
*Clay content in the control section:* 20 to 30 percent
*Redoximorphic features:* 5 to 15 percent plinthite segregations at a depth of 30 to 60 inches
*Other features:* The soil is dry in the moisture control section for 75 to 90 cumulative days in most years.
*Concentrated minerals:* Base saturation at a depth of 72 inches ranges from 18 to 35 percent.
*Reaction:* Very strongly acid to slightly acid in the A horizon, unless limed; and very strongly acid to moderately acid in the Bt, Btv, and Btv/E horizons.

#### A horizon

*Hue:* 10YR
*Value:* 3 to 5
*Chroma:* 2 or 3
*Texture:* Loamy fine sand
*Reaction:* Very strongly acid to slightly acid, unless limed

#### E horizon

*Hue:* 10YR
*Value:* 5 to 7
*Chroma:* 3 or 4
*Texture:* Loamy fine sand

*Reaction:* Very strongly acid to slightly acid
*Other features*: Combined thickness of the A and E horizons ranges from 20 to 40 inches

**Bt horizon**

*Hue:* 5YR to 10YR
*Value:* 5 or 6
*Chroma:* 6 or 8
*Color features:* Some pedons have value of 5, and chroma of 4
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from none to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to common. Iron depletions with chroma of 2 or less, range from a depth of 30 to 60 inches.
*Texture:* Sandy clay loam and fine sandy loam
*Other features:* Nodular plinthite ranges from 0 to 4 percent by volume.
*Reaction:* Very strongly acid to moderately acid, unless limed

**Btv horizon**

*Hue:* 2.5YR to 10YR
*Value:* 4 to 7
*Chroma:* 1 to 8; or variegated in shades of brown, red, and gray
*Texture:* Sandy clay loam, fine sandy loam, or clay loam
*Other features:* Nodular plinthite makes up 5 to 15 percent by volume. Streaks, pockets or coatings of clean sand range from few to about 10 percent by volume. Brittle masses comprise up to 15 percent by volume.

## Manco Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape*: Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Somewhat poorly drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bibb soils have coarse-loamy control sections.
- Iulus soils have coarse-loamy control sections.
- Mantachie soils have fine-loamy control sections.
- Sardis soils are dryer and slightly higher positions.
- Socagee soils have a dominant chroma of 1.

### *Taxonomic Classification*

Fine-silty, siliceous, active, acid, thermic Fluvaquentic Endoaquepts

### *Typical Pedon*

Manco silt loam in an area of Sardis-Manco complex, frequently flooded; located from the intersection of Farm Road 727 and Texas Highway 49 in Gray; 2.3 miles northeast on Texas Highway 49 to Gethsemane; 1.6 miles south on county road; and 198 feet

northwest in flood plain. Trees, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 44.31 seconds N., and Longitude—94 degrees, 6 minutes, 37.39 seconds W.

A1—0 to 3 inches; dark grayish brown (10YR 4/2), silt loam; weak fine and medium subangular blocky structure; friable; common very fine to medium roots; 1 percent fine distinct yellowish red (5YR 5/8) iron stains along roots; very strongly acid; clear smooth boundary.

A2—3 to 6 inches; brown (10YR 4/3), silt loam; weak fine and medium subangular blocky structure; friable; common very fine and fine, and common medium roots; 2 percent fine and medium distinct yellowish red (5YR 5/8) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bw—6 to 24 inches; grayish brown (10YR 5/2), silt loam; 1 percent coarse faint pale brown (10YR 6/3) mottles; weak fine and medium subangular blocky structure; friable; 8 percent fine and medium strong brown (7.5YR 5/8) ironstone nodules; 5 percent medium and coarse dark yellowish brown (10YR 4/4) masses of oxidized iron; 1 percent medium and coarse iron-manganese concretions; very strongly acid; gradual wavy boundary.

Bg1—24 to 48 inches; gray (10YR 6/1), silt loam; weak fine and medium subangular blocky structure; friable; 10 percent iron-manganese concretions; 5 percent fine and medium distinct strong brown (7.5YR 5/8) masses of oxidized iron; 5 percent medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; 2 percent fine and medium dark yellowish brown (10YR 4/4) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bg2—48 to 58 inches; gray (10YR 6/1), silty clay loam; weak fine and medium subangular blocky structure; friable; 5 percent medium distinct strong brown (7.5YR 5/6) masses of oxidized iron; 2 percent fine and medium faint yellowish brown (10YR 5/6) masses of oxidized iron; 1 percent iron-manganese concretions; 10 percent brittle bodies; very strongly acid; gradual wavy boundary.

Bg3—58 to 65 inches; light brownish gray (10YR 6/2), silty clay loam; weak fine and medium subangular blocky structure; friable; 20 percent coarse distinct strong brown (7.5YR 5/6) masses of oxidized iron; 10 percent medium distinct strong brown (7.5YR 5/8) masses of oxidized iron; gray (10YR 5/1) interior; few clay bodies; very strongly acid; gradual wavy boundary.

Bg4—65 to 80 inches; light brownish gray (10YR 6/2), clay loam; weak fine and medium subangular blocky structure; friable; 5 percent medium and coarse distinct strong brown (7.5YR 5/8) masses of oxidized iron; stains and lenses of very pale brown (10YR 7/3) sandy loam; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in control section*: 20 to 34 percent
*Organic carbon content*: 0.2 to 0.5 percent at a depth of 50 inches
*Other features:* These soils are dry in some part of the moisture control section for more than 60 cumulative days in most years.
*Reaction:* Extremely acid or very strongly acid throughout

#### *A horizon*

*Hue:* 10YR
*Value:* 4 to 5
*Chroma:* 2 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Silt loam

**Bw horizon**

*Hue:* 10YR or 2.5Y
*Value:* 4 to 5
*Chroma:* 2 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Loam, silt loam, clay loam, or silty clay loam

**Bg horizon**

*Hue:* 10YR or 2.5Y
*Value:* 4 to 7
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Loam, silt loam, clay loam, or silty clay loam

## Mantachie Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Flood plain
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Somewhat poorly drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bibb soils have coarse-loamy control sections.
- Gladewater soils have very-fine control sections.
- Hannahatchee soils are well drained, and occur on slightly higher positions.
- Iulus soils are moderately well drained, and occur on slightly higher positions.
- Latch soils have loamy surfaces more than 40 inches.
- Manco soils have fine-silty control sections.
- Mooreville soils have a brown cambic horizon.
- Sardis soils have fine-silty control sections.
- Socagee soils have fine-silty control sections, and are poorly drained.

### *Taxonomic Classification*

Fine-loamy, siliceous, active, acid, thermic Fluventic Endoaquepts

### *Typical Pedon*

Mantachie loam in an area of Mantachie loam, frequently flooded; located from the intersection of U.S. Highway 59 and Texas Highway 77 in Atlanta; 200 feet north of intersection on U.S. Highway 59; 0.7 mile east on Ranch Road; and 710 feet north of road in pasture. Atlanta South, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 6 minutes, 23.00 seconds N., and Longitude—94 degrees, 11 minutes, 2.00 seconds W.

A—0 to 8 inches; dark grayish brown (10YR 4/2), loam; weak fine and medium subangular blocky structure; friable; 15 percent fine and medium distinct dark yellowish brown (10YR 4/4), and 1 percent fine prominent yellowish red (5YR 4/6) masses of oxidized iron; very strongly acid; clear wavy boundary.
Bw—8 to 17 inches; 50 percent grayish brown (10YR 5/2), 30 percent dark yellowish brown (10YR 4/4), and 19 percent reddish brown (5YR 4/4), and loam; weak fine and medium subangular blocky structure; friable; 1 percent dark yellowish brown (10YR 4/4) iron-manganese concretions; very strongly acid; clear wavy boundary.
Bg1—17 to 29 inches; light brownish gray (10YR 6/2), loam; weak fine and medium subangular blocky structure; friable; 15 percent fine yellowish brown (10YR 5/8), and 15 percent medium yellowish brown (10YR 5/8) masses of oxidized iron; 1 percent fine prominent yellowish red (5YR 4/6) masses of oxidized iron; 1 percent dark yellowish brown (10YR 4/4) iron-manganese concretions; very strongly acid; gradual wavy boundary.
Bg2—29 to 50 inches; dark gray (10YR 4/1), clay loam; 15 percent medium distinct yellowish brown (10YR 5/8) and 1 percent fine prominent yellowish red (5YR 4/6) mottles; weak fine and medium subangular blocky structure; firm; very strongly acid; clear wavy boundary.
Bg3—50 to 73 inches; dark gray (10YR 4/1), clay loam; 15 percent medium prominent red (2.5YR 4/6) and 15 percent medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; firm; lenses of 10YR 7/2 loamy fine sand; very strongly acid; gradual wavy boundary.
Bg4—73 to 80 inches; gray (10YR 5/1), clay loam; 15 percent medium and coarse distinct strong brown (7.5YR 5/6) and 1 percent fine prominent yellowish red (5YR 4/6) mottles; weak fine subangular blocky structure; firm; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* 30 to more than 60 inches
*Redoximorphic features:* Iron-manganese concretions and iron concentrations range from none to common throughout the profile.
*Content of fragments:* 0 to 10 percent, by volume
*Reaction:* Very strongly acid or strongly acid throughout, except for surface layers that have been limed.

#### A horizon

*Hue:* 10YR or 2.5Y
*Value:* 3 to 5
*Chroma:* 1 to 4
*Redoximorphic concentrations:* Iron concentrations in shades of red or brown range from few to common
*Texture:* Loam

#### Bw horizon

*Hue:* 10YR or 2.5Y
*Value:* 4 to 6
*Chroma:* 3 to 8
*Color features:* Horizon may be variegated in shades of red, brown, yellow, or gray
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to common
*Texture:* Loam

#### Bg horizon

*Hue:* 10YR or 2.5Y

*Value:* 4 to 7
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Clay loam, sandy clay loam, or loam

## Metcalf Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Parent material*: Loamy alluvium
*Geology:* Wilcox Group
*Drainage class:* Somewhat poorly drained
*Permeability class:* Very slow (less than 0.06 in/hr)
*Soil depth class:* Very deep
*Shrink-swell potential*: High
*Slope*: 0 to 2 percent

### *Associated Soils*

- Eastwood soils have fine control sections.
- Erno are well drained and have a fragipan.
- Latex soils have a fine-loamy control section.
- Wrightsville soils are gray throughout, and occur on lower positions.

### *Taxonomic Classification*

Fine-silty, siliceous, semiactive, thermic Glossaquic Paleudalfs

### *Typical Pedon*

Metcalf silt loam in an area of Metcalf silt loam, 0 to 2 percent slopes, in hardwoods; located from the intersection of Texas Highway 49 and Texas Highway 43 in Smithland; 2.3 miles south on Texas Highway 43; and 150 feet west along highline on south side. Smithland, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 52.50 seconds N., and Longitude—94 degrees, 10 minutes, 52.50 seconds W.

A—0 to 4 inches; brown (10YR 5/3), silt loam; weak fine subangular blocky structure; friable; moderately acid; clear smooth boundary.

E—4 to 10 inches; light yellowish brown (10YR 6/4), silt loam; weak fine subangular blocky structure; friable; strongly acid; clear wavy boundary.

Bt/E1—10 to 20 inches; yellowish brown (10YR 5/6), clay loam; weak coarse prismatic and weak fine and medium subangular blocky structure; friable; few faint clay films; 20 percent fine prominent red (2.5YR 4/6) masses of oxidized iron; 10 percent fine distinct light brownish gray (10YR 6/2) iron depletions; 10 percent light gray (10YR 7/2) clean sand (E material); very strongly acid; clear wavy boundary.

Bt/E2—20 to 31 inches; yellowish brown (10YR 5/6), clay loam; weak fine and medium subangular blocky and weak coarse prismatic structure; friable; few faint clay films; 20 percent medium prominent red (2.5YR 4/6) masses of oxidized iron; 10 percent medium prominent light brownish gray (10YR 6/2) iron depletions; 15 percent light gray (10YR 7/2) clean sand (E material); very strongly acid; clear wavy boundary.

2Bt/E—31 to 45 inches; 50 percent red (2.5YR 4/6), 30 percent gray (10YR 5/1), and 15 percent yellowish brown (10YR 5/6) clay; moderate fine and medium

subangular blocky and moderate coarse prismatic structure; firm; common distinct clay films; 5 percent light gray (10YR 7/1) clean sand (E material); extremely acid; gradual wavy boundary.

2Btg1—45 to 57 inches; 60 percent light brownish gray (10YR 6/2), 25 percent red (2.5YR 4/6), and 15 percent yellowish brown (10YR 5/4), clay; moderate fine and medium subangular blocky structure; firm; common distinct clay films; extremely acid; gradual wavy boundary.

2Btg2—57 to 80 inches; 55 percent gray (10YR 6/1), 30 percent red (2.5YR 4/6), and 15 percent yellowish brown (10YR 5/4), clay; weak fine and medium subangular blocky structure; firm; common distinct clay films; extremely acid.

### *Range in Characteristics*

*Solum thickness:* 60 to about 100 inches
*Clay content in the control section:* 18 to 35 percent
*Redoximorphic features:* Iron depletions are within the top 10 inches of argillic horizon
*Other features:* Clayey lithologic discontinuity at 27 to 40 inches deep; interfingers of albic material in horizons between 24 to 59 inches deep.

**A horizon**

*Hue:* 10YR
Value: 3 to 5
*Chroma:* 2 to 4
*Texture:* Silt loam
*Reaction:* Extremely acid to moderately acid, except where limed

**E horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 3 or 4
*Texture:* Silt loam
*Reaction:* Extremely acid to moderately acid

**Bt/E horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 4 to 8
*Color features*: Some pedons have gray colors in the E parts
*Redoximorphic features:* Iron depletions with chroma of 1 or 2 in the lower parts range from few to common
*Texture:* Loam, silt loam, or clay loam
*Reaction:* Extremely acid to moderately acid

**2Bt/E horizon**

*Hue:* 10YR
*Value:* Bt part—4 to 6; E part—5 or 6
*Chroma:* Bt part—2 to 6; E part—3 to 6
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common
*Texture:* Bt part—silt loam, loam, or clay loam; E part—silt loam or very fine sandy loam
*Reaction:* Extremely acid to moderately acid

**2Btg horizon**

*Hue:* 2.5 YR to 10YR
*Value:* 4 to 6
*Chroma:* 1 to 6

*Texture:* Clay, silty clay loam, or clay loam containing more than 35 percent clay
*Reaction:* Extremely acid to moderately acid

## Mollville Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Poorly drained
*Permeability class:* Slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bernaldo soils are well drained and on higher positions.
- Guyton soils have fine-silty control sections.
- Hainesville soils are sandy throughout.
- Latch soils have loamy surfaces more than 40 inches.
- Wrightsville soils have fine control sections.

### *Taxonomic Classification*

Fine-loamy, siliceous, active, thermic Typic Glossaqualfs

### *Typical Pedon*

Mollville loam in an area of Mollville loam, 0 to 1 percent slopes; located at the intersection of Texas Highway 43 and Texas Highway 49 in Smithland; 0.8 mile east on Texas Highway 49; 2.9 miles south on County Road to intersection; 0.6 mile east and southeast on County Road to the Caddo State Park Recreation Area; and 50 feet southwest in woods. Smithland, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 11.70 seconds N., and Longitude—94 degrees, 9 minutes, 2.20 seconds W.

A—0 to 3 inches; dark grayish brown (10YR 4/2), loam; weak fine subangular blocky structure; friable; many fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations; many fine faint light brownish gray (10YR 6/2) redoximorphic depletions; 20 percent light gray (10YR 7/1) albic intrusions of E material; very strongly acid; clear smooth boundary.

Eg—3 to 9 inches; light brownish gray (10YR 6/2), loam; weak fine and medium subangular blocky structure; friable; common fine distinct yellowish brown (10YR 5/6) and few fine distinct strong brown (7.5YR 4/6) redoximorphic concentrations; many fine faint light gray (10YR 7/1) redoximorphic depletions; very strongly acid; clear wavy boundary.

Btg/E1—9 to 19 inches; grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to weak fine and medium subangular blocky; friable; common distinct clay films; many medium distinct yellowish brown (10YR 5/6) and few fine distinct strong brown (7.5YR 4/6) redoximorphic concentrations; ped exteriors are dark grayish brown (10YR 4/2); 20 percent light gray (10YR 7/1) albic intrusions of E material; very strongly acid; gradual wavy boundary.

Btg/E2—19 to 30 inches; grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to weak fine and medium subangular blocky; firm; thick clay films; common medium prominent strong brown (2.5YR 4/6) and common fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations; 18 to 21 percent light gray (10YR 7/1) albic intrusions of E material; very strongly acid; gradual wavy boundary.

Btg/E3—30 to 45 inches; grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to weak fine and medium subangular blocky; firm; thick clay films; common medium prominent red (2.5YR 4/8) and few fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations; 18 percent light gray (10YR 7/1) albic intrusions of E material; strongly acid; gradual wavy boundary.

Btg/E4—45 to 57 inches; grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to weak fine and medium subangular blocky; firm; thick clay films; common medium prominent yellowish red (5YR 4/6) and common fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations; 15 percent light gray (10YR 7/2) albic intrusions of E material; moderately acid; clear wavy boundary.

BCtg—57 to 65 inches; grayish brown (10YR 5/2), sandy clay loam; weak fine subangular blocky structure; friable; few faint clay films on faces of peds; many medium distinct yellowish brown (10YR 6/1) redoximorphic concentrations; common coarse faint gray (10YR 6/1) redoximorphic depletions; lenses and strata of gray (10YR 6/1) and light gray (10YR 7/1) 0.5 to 1.5 centimeters thick; slightly acid; clear wavy boundary.

2Cg—65 to 80 inches; light gray (10YR 7/1), stratified fine sandy loam and loamy fine sand; very friable; common coarse distinct strong brown (7.5YR) redoximorphic concentrations; neutral.

### *Range in Characteristics*

*Solum thickness:* 40 to more than 80 inches
*Clay content in the control section:* 20 to 35 percent
*Redoximorphic features:* Iron concentrations in shades of red, brown, or yellow are in all layers below the A horizon.
*Other features:* The combined thickness of the epipedon is 6 to 20 inches. About 20 to 40 percent of the sand fraction is coarser than very fine sand. The soil is dry in the moisture control section for 50 cumulative days or more in most years.
*Concentrated minerals:* Salinity ranges from nonsaline to slightly saline and the sodium adsorption ratio ranges from 2 to 10 throughout the argillic horizon.

#### A horizon

*Hue:* 10YR
*Value:* 3 to 5
*Chroma:* 1 or 2
*Texture:* Loam
*Reaction:* Very strongly acid to moderately acid, unless limed

#### Eg horizon

*Hue:* 10YR
*Value:* 4 to 8
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from few to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from few to common
*Texture:* Loam
*Reaction:* Very strongly acid to moderately acid, unless limed

**Btg/E horizon**

*Hue:* Bt part—10YR or 2.5Y; E part—10YR
*Value:* Bt part—5 to 7; E part—5 to 8
*Chroma:* Bt part—1 or 2; E part—1 or 2
*Color features*: The faces of some peds have darker coats than these colors.
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Loam, sandy clay loam, or clay loam
*Other features:* The E parts consist of albic material in the form of vertical intrusions, and streaks or pockets that occupy 5 to about 35 percent of the horizon. Some subhorizons at least 2 inches in thickness have more than 15 percent intrusions of albic materials.
*Reaction:* Very strongly acid to moderately acid

**BCtg/E horizon (where present)**

*Hue:* BCtg part—10YR or 2.5Y; E part—10YR
*Value:* BCtg part—5 to 7; E part—5 to 8
*Chroma:* BCtg part—1 or 2; E part—1 or 2
*Color features*: The faces of some peds have darker coats than these colors.
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Loam, sandy clay loam, or clay loam
*Other features:* The E part consists of albic material in the form of vertical intrusions, and streaks or pockets that occupy 5 to about 35 percent of the horizon.
*Reaction:* Very strongly acid to slightly alkaline

**Btg or BCtg horizon**

*Hue:* 10YR or 2.5Y
*Value:* 5 to 7
*Chroma:* 1 or 2
*Color features*: The faces of some peds have darker coats than these colors.
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Texture:* Loam, sandy clay loam, or clay loam
*Other features:* Streaks of albic materials range from none to few
*Reaction:* Strongly acid to slightly alkaline

**2C or 2Cg horizon**

*Hue:* 10YR or 2.5Y
*Value:* 5 to 7
*Chroma:* 1 to 4
*Redoximorphic features:* Streaks and iron concentrations in shades of red, brown, or yellow range from none to common, or the layer is variegated with these colors.
*Texture:* Loamy fine sand, fine sandy loam, or it is stratified with these textures. The average clay content ranges from 3 to about 12 percent.
*Reaction:* Strongly acid to slightly alkaline

## Mooreville Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock

*Drainage class:* Moderately well drained
*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 0 to 1 percent

### *Associated Soils*

- Mantachie soils have a gray cambic horizon, and are poorly drained.
- Socagee soils have fine silty control sections, and are poorly drained.

### *Taxonomic Classification*

Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts

### *Typical Pedon*

Mooreville silt loam in an area of Mooreville-Mantachie complex, frequently flooded; located from the intersection of Texas Highway 11 and Texas Highway 8 in Linden; 3.8 miles north on Texas Highway 8; 2.6 miles east on County Road 1123; 1 mile north on County Road 1118; and 50 feet east in woods. Linden, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 5 minutes, 14.11 seconds N., and Longitude—94 degrees, 20 minutes, 15.34 seconds W.

A1—0 to 4 inches; brown (10YR 4/3), silt loam; moderate fine granular structure; very friable, soft; many fine and medium, and common coarse roots; 1 percent fine irregular black (10YR 2/1) iron-manganese masses; strongly acid; clear smooth boundary.

A2—4 to 9 inches; brown (10YR 4/3), loam; weak fine subangular blocky parting to weak fine granular; very friable, slightly hard; common fine and medium, and common coarse roots; common very fine and fine low continuity vesicular pores; 25 percent faint dark brown (10YR 3/3) organic stains on faces of peds; 1 percent fine irregular extremely weakly cemented black (10YR 2/1) iron-manganese concretions; strongly acid; clear wavy boundary.

Bw1—9 to 22 inches; yellowish brown (10YR 5/4), loam; 20 percent fine faint brown (10YR 5/3) mottles; weak medium subangular blocky structure; friable, slightly hard; common fine and medium, and common coarse roots; common fine and many very fine low continuity vesicular pores; common fine distinct strong brown (7.5YR 5/6) iron concentrations; few fine faint grayish brown (10YR 5/2) iron depletions; very strongly acid; clear wavy boundary.

Bw2—22 to 29 inches; yellowish brown (10YR 5/6), sandy clay loam; weak medium subangular blocky structure; friable, slightly hard; common fine and medium roots; many very fine and fine low continuity vesicular pores; common fine distinct strong brown (7.5YR 5/6) iron concentrations; common fine faint grayish brown (10YR 5/2) irregularly shaped iron depletions; very strongly acid; clear wavy boundary.

Bw3—29 to 37 inches; yellowish brown (10YR 5/6), sandy clay loam; weak medium subangular blocky structure; friable, slightly hard; common very fine and fine roots; many fine and medium vesicular pores; 2 percent prominent strong brown (7.5YR 5/6) iron stains on faces of peds and in pores; common medium strong brown (7.5YR 5/6) iron concentrations; many medium distinct grayish brown (10YR 5/2) irregular shaped iron depletions; very strongly acid; clear wavy boundary.

Bg1—37 to 57 inches; gray (10YR 5/1), sandy clay loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable, slightly hard; common very fine and fine roots; common very fine and fine, and common medium vesicular pores; 2 percent prominent strong brown (7.5YR 5/6) iron stains on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) irregular shaped iron concentrations; 5 percent fine spherical extremely weakly cemented brown (7.5YR 5/4) iron concretions; very strongly acid; clear wavy boundary.

Bg2—57 to 80 inches; light brownish gray (10YR 6/2), fine sandy loam; weak fine subangular blocky structure; friable, slightly hard; common very fine and fine roots; common very fine and fine, and common medium vesicular pores; many coarse prominent brown (7.5YR 5/4) and common coarse distinct yellowish brown (10YR 5/4) irregularly shaped iron concentrations; 5 percent fine spherical extremely weakly cemented brown (7.5YR 5/4) iron concretions; very strongly acid.

***Range in Characteristics***

*Solum thickness:* 40 to more than 60 inches
*Redoximorphic features*: Concretions and/or coatings of iron and manganese oxides range from none to common

**A horizon**

*Hue:* 10YR
Value: 3 to 5
*Chroma:* 2 or 3
*Texture:* Loam
*Reaction:* Very strongly acid or strongly acid

**Bw horizon**

*Hue:* 10YR or 2.5Y
*Value:* 4 or 5
*Chroma:* 3 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of brown and black range from none to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to common
*Texture:* Sandy clay loam, clay loam, or loam
*Reaction:* Very strongly acid or strongly acid

**Bg horizon**

*Hue:* 10YR or 2.5Y
*Value:* 5 or 6
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown and black range from none to common
*Redoximorphic depletions:* Iron depletions in shades of gray range from none to common
*Texture:* Fine sandy loam, loam, sandy clay loam, clay loam
*Reaction:* Very strongly acid or strongly acid

## Redsprings Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Crest
*Parent material*: Loamy marine deposits derived from glauconitic sandstone
*Geology*: Weches Formation
*Drainage class:* Well drained
*Permeability class:* Slow
*Soil depth class:* Deep to densic material
*Shrink-swell potential*: Moderate
*Slope*: 2 to 40 percent

### *Associated Soils*

- Cuthbert soils have 20- to 40-inch sola, and occur on similar position.
- Elrose soils have fine-loamy control section, and occur on lower slopes.
- Kirvin soils have base saturation less than 35 percent.
- Tenaha have arenic surface layer, and occur on similar positions.

### *Taxonomic Classification*

Fine, kaolinitic, thermic Ultic Hapludalfs

### *Typical Pedon*

Redsprings gravelly fine sandy loam in an area of Cuthbert and Redsprings soils, 5 to 15 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 155 and Farm Market 161; 4.0 miles north on Farm Market 161; 0.8 mile north on County Road 1591; and 0.9 mile north on County Road 2991 to roadcut. Lone Star, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 57 minutes, 4.30 seconds N., and Longitude—94 degrees, 38 minutes, 5.02 seconds W.

A1—0 to 3 inches; dark reddish brown (2.5YR 3/4), gravelly fine sandy loam; weak fine granular structure; many fine and medium roots; 25 percent ironstone gravels; slightly acid; clear smooth boundary.

A2—3 to 9 inches; reddish brown (2.5YR 4/4), gravelly fine sandy loam; weak fine and medium granular structure; many fine roots and common medium roots; 20 percent ironstone gravels; moderately acid; gradual wavy boundary.

Bt1—9 to 26 inches; red (2.5YR 4/6), clay; 1 percent fine distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; many fine roots and common medium roots; clay films on faces of peds; 3 to 5 percent weathered masses of glauconite; strongly acid; gradual wavy boundary.

Bt2—26 to 44 inches; red (2.5YR 4/6), clay; 3 percent medium distinct strong brown (7.5YR 5/6) mottles; moderate fine and medium subangular blocky structure; common fine and medium roots; clay films on faces of peds; 10 to 15 percent weathered masses of glauconite; strongly acid; gradual wavy boundary.

BC—44 to 53 inches; red (2.5YR 4/6), clay; 20 percent medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; few fine and medium roots; 8 to 10 percent ironstone gravel; 20 to 30 percent weathered masses of glauconite; strongly acid; gradual wavy boundary.

Cd—53 to 80 inches; strong brown (7.5YR 5/8), and red (2.5YR 4/6), clay loam; massive; ironstone stratas; weathered glauconite; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* 40 to 60 inches
*Clay content in the control section:* 35 to 60 percent
*Concentrated minerals:* The base saturation ranges from 35 to 60 percent at a depth 50 inches below the top of the argillic horizon. Ironstone fragments 0.5 inch to 3 inches thick and 3 to 20 inches across are on, or imbedded in, the surface of some pedons, covering less than 1 percent of the surface area.

#### A horizon

*Hue:* 2.5YR or 5YR
*Value:* 3 or 4
*Chroma:* 2 to 6
*Texture:* Gravelly fine sandy loam
*Other features:* Ironstone pebbles range from 15 to 60 percent by volume
*Reaction:* Moderately acid to neutral

**Bt horizon**

*Hue:* 2.5YR
*Value:* 3 or 4
*Chroma:* 3 to 8
*Texture:* Clay loam or clay with clay content ranging from 35 to 60 percent
*Coarse fragments:* Ironstone and glauconitic pebbles and fragments up to 18 inches across range from 0 to 20 percent by volume.
*Other features:* Some pedons have up to 10 percent fragments of weathered shale.
*Reaction:* Very strongly acid to slightly acid

**BC horizon**

*Hue:* 2.5YR or 5YR
*Value:* 4 to 6
*Chroma:* 4 to 8
*Texture:* Clay loam or clay, some pedons are sandy clay loam
*Coarse fragments:* Ironstone pebbles and horizontally oriented glauconitic ironstone fragments 0.5 inch to 3 inches thick and up to 24 inches across range from a few to 20 percent by volume.
*Other features:* Weathered glauconitic materials in shades of brown and yellow range from 5 to 40 percent and thin gray discontinuous shale and clay strata ranges from 0 to 10 percent by volume.
*Reaction:* Very strongly acid through moderately acid

**Cd horizon**

*Color features:* Shades of brown and yellow with or without interbedded layers of weakly consolidated red sandy clay loam, or gray shale.
*Texture:* Shale and fractured strata of glauconitic ironstone or sandstone interbedded with layers of sandy clay loam
*Other features:* Shale and fractured discontinuous strata of glauconitic ironstone or sandstone 0.5 inch to 3 inches thick. Roots penetrate the materials, but are concentrated along fractures and cleavage planes. Most pedons have clay flows along vertical fractures.
*Reaction:* Very strongly acid through moderately acid

## Rentzel Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Toeslopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from sedimentary rock
*Geology*: Queen City Sand Formation
*Drainage class:* Moderately well drained
*Permeability class:* Moderately slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 3 percent

***Associated Soils***

- Bowie soils have loamy surface less than 20 inches.
- Darco soils have loamy surface more than 40 inches.

- Lilbert soils are well drained on slightly higher positions.
- Tenaha soils have a sola less than 60 inches.

### *Taxonomic Classification*

Loamy, siliceous, semiactive, thermic Arenic Plinthaquic Paleudults

### *Typical Pedon*

Rentzel loamy fine sand in an area of Rentzel loamy fine sand, 0 to 3 percent slopes, in intermixed conifers and hardwoods; located from the intersection of U.S. Highway 59 and Loop 236 in Queen City; 0.5 mile east and north on Loop 236; 0.9 mile east on Farm Market 74; 0.1 mile north on 5th Street; 3.2 miles east and northeast on County Road 3774 to gate #10; 0.3 mile north on Farm Road; and 50 feet east in woods. Bloomburg, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 10 minutes, 46.00 seconds N., and Longitude—94 degrees, 6 minutes, 20.00 seconds W.

Ap—0 to 11 inches; brown (10YR 5/3), loamy fine sand; weak granular structure; very friable; common fine and medium, and few coarse roots; moderately acid; clear smooth boundary.

E—11 to 25 inches; pale brown (10YR 6/3), loamy fine sand; weak granular structure; very friable; common fine and medium, and few coarse roots; few lenses of yellowish brown (10YR 5/6); moderately acid; gradual smooth boundary.

Bt1—25 to 28 inches; yellowish brown (10YR 5/6), sandy clay loam; moderate fine and medium subangular blocky structure; firm; common fine roots and few medium roots; few faint clay films; fine and medium distinct yellowish red (5YR 4/6) masses of oxidized iron; medium faint light yellowish brown (10YR 6/4) clay depletions; strongly acid; gradual wavy boundary.

Bt2—28 to 34 inches; yellowish brown (10YR 5/6), sandy clay loam; moderate medium subangular blocky structure; firm; common fine roots and few medium roots; few faint clay films; 8 percent fine and medium prominent yellowish red (5YR 4/6) masses of oxidized iron; 5 percent light brownish gray (10YR 6/2) iron depletions lining pores; 1 percent plinthite nodules; very strongly acid; gradual wavy boundary.

Btv/E1—34 to 43 inches; yellowish brown (10YR 5/6), sandy clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; few faint clay films; 1 percent coarse prominent red (2.5YR 4/6) masses of oxidized iron; 6 percent plinthite nodules; 30 percent light brownish gray (10YR 6/2) albic intrusions (E material); very strongly acid; gradual wavy boundary.

Btv/E2—43 to 52 inches; yellowish brown (10YR 5/4), fine sandy loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few faint clay films; 1 percent medium and coarse red (2.5YR 4/6) iron depletions; 8 percent plinthite nodules; 25 percent light brownish gray (10YR 6/2) albic intrusions (E material); strongly acid; gradual wavy boundary.

Btv/E3—52 to 65 inches; yellowish brown (10YR 5/6), fine sandy loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; few faint clay films; 3 percent medium prominent red (2.5YR 4/6) masses of oxidized iron; 15 percent gray (10YR 6/1) fine sandy loam (E material); 5 percent plinthite nodules; approximately 10 percent brittle bodies; strongly acid; gradual wavy boundary.

Bt/E—65 to 80 inches; brownish yellow (10YR 6/6), sandy clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; few faint clay films; 35 percent gray (10YR 6/1) sandy clay loam (E material); 20 percent brittle bodies; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 15 to 25 percent

*Other features:* The soil is dry in some part of the moisture control section in most years for 75 to 90 days.
*Concentrated minerals:* Depth to a horizon containing more than 5 percent plinthite is 30 to 60 inches.
*Reaction:* Extremely acid to moderately acid in the A and E horizons, except where limed; and extremely acid to strongly acid in the Bt and Btv horizons.

**A horizon**

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 2 or 3
*Texture:* Loamy fine sand

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 2 to 4
*Redoximorphic depletions:* Iron or clay depletions in shades of gray range from few to many in the lower parts
*Texture:* Loamy fine sand
*Other features*: Combined thickness of the A and E horizons ranges from 20 to 40 inches

**Bt horizon**

*Hue:* 5YR to 10YR
*Value:* 4 to 6
*Chroma:* 6 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many. Some pedons have a variegated matrix of these colors.
*Redoximorphic depletions:* Iron depletions in shades gray, and depletions with chroma 2 or less are within the upper 5 inches of the horizon. Some pedons have a variegated matrix of these colors.
*Texture:* Fine sandy loam or sandy clay loam
*Other features:* Nodular plinthite ranges from none to 4 percent

**Btv/E horizon**

*Hue:* 5YR to 10YR
*Value:* 5 to 7
*Chroma:* 1 to 6
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, or yellow range from few to many. Some pedons have a variegated matrix of these colors.
*Redoximorphic depletions:* Iron depletions in shades gray range from few to many, and iron depletions with chroma 2 or less commonly increase with depth. Some pedons have a variegated matrix of these colors.
*Texture:* Fine sandy loam or sandy clay loam
*Other features:* Nodular plinthite ranges from 5 to 15 percent

## Sacul Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Head slope
*Parent material*: Loamy marine deposits derived from sandstone and shale

*Geology*: Queen City Sand Formation; Reklaw Formation
*Drainage class:* Moderately well drained
*Permeability class:* Slow
*Soil depth class:* Very deep
*Shrink-swell potential*: High
*Slope*: 1 to 5 percent

### *Associated Soils*

- Bowie soils have fine-loamy control sections.
- Cuthbert soils have sola 20 to 40 inches thick.
- Eylau soils have fine-loamy control sections.
- Kirvin soils lack gray mottles in the upper argillic.

### *Taxonomic Classification*

Fine, mixed, active, thermic Aquic Hapludults

### *Typical Pedon*

Sacul very fine sandy loam in an area of Sacul very fine sandy loam, 1 to 5 percent slopes, in hardwoods; located from the intersection of Farm Market 729 and Farm Market 1969 in Rock Springs and North Lake O' the Pines; 0.3 mile southeast on Farm Market 729; 0.3 mile south on paved access road; 0.1 mile west on boundary line; 0.1 mile south on boundary line; and 0.1 mile east in woods. Lassater, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 58.89 seconds N., and Longitude—94 degrees, 31 minutes, 40.07 seconds W.

A—0 to 4 inches; dark grayish brown (10YR 4/2), very fine sandy loam; weak fine subangular blocky structure; friable, soft; few fine roots and few medium roots; 1 percent medium prominent strong brown (7.5YR 5/6), and 1 percent fine prominent strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; clear wavy boundary.

E—4 to 11 inches; light yellowish brown (10YR 6/4), very fine sandy loam; weak fine subangular blocky structure; friable, soft; few fine and few medium roots; few fine and many medium pores; 2 percent fine prominent strong brown (7.5YR 5/6), 2 percent medium prominent strong brown (7.5YR 5/6), 2 percent fine prominent yellowish red (5YR 5/8), 2 percent medium prominent yellowish red (5YR 5/8) masses of oxidized iron; 1 percent fine faint pale brown (10YR 6/3) iron depletions; very strongly acid; gradual wavy boundary.

Bt1—11 to 17 inches; red (2.5YR 4/6), clay; moderate medium subangular blocky structure; very firm, extremely hard; few medium roots; common distinct clay films on faces of peds; 1 percent medium prominent brownish yellow (10YR 6/6) masses of oxidized iron; 1 percent fine faint grayish brown (10YR 5/2) iron depletions; very strongly acid; clear wavy boundary.

Bt2—17 to 24 inches; red (2.5YR 4/6), clay; moderate medium subangular blocky structure; very firm, extremely hard; common distinct clay films on faces of peds; 1 percent pressure faces; 2 percent medium prominent yellowish brown (10YR 5/4), 2 percent fine prominent yellowish brown (10YR 5/4), and 1 percent fine prominent dark yellowish brown (10YR 3/6) masses of oxidized iron; 1 percent medium prominent grayish brown (10YR 5/2) iron depletions; very strongly acid; gradual wavy boundary.

Bt3—24 to 31 inches; 60 percent reddish brown (2.5YR 4/4), and 20 percent pale brown (10YR 6/3), and 19 percent light brownish gray (10YR 6/2), clay; moderate medium subangular blocky structure; very firm, extremely hard; common distinct clay films on faces of peds; 1 percent pressure faces; 1 percent fine faint yellowish brown (10YR 5/6) iron depletions; very strongly acid; gradual wavy boundary.

Btg1—31 to 41 inches; light brownish gray (10YR 6/2), clay loam; moderate medium subangular blocky structure; very firm, extremely hard; common faint clay films; 2 percent medium prominent reddish brown (2.5YR 4/4), 2 percent coarse prominent reddish brown (2.5YR 4/4), and 1 percent fine distinct strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Btg2—41 to 45 inches; light brownish gray (10YR 6/2), clay loam; weak fine subangular blocky structure; firm; common faint clay films; 2 percent coarse prominent reddish brown (2.5YR 4/4), 2 percent medium prominent reddish brown (2.5YR 4/4), and 1 percent fine distinct strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Cd—45 to 80 inches; light brownish gray (10YR 6/2), strong brown (7.5YR 5/6), and red (2.5YR 4/6), stratified fine sandy loam; massive; friable, soft; stratified fine sandy loam sandstone and clay shale; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* 40 to more than 80 inches

*Other features:* Fragments of ironstone and quartz, 2 to 75 millimeters in diameter, range from 0 to 60 percent by volume in the A and E horizons, and fragments of ironstone, quartz, or shale range from 0 to 10 percent in the Bt, BC, and C horizons. A paralithic contact is at 40 to more than 80 inches deep.

*Concentrated minerals:* Base saturation is commonly less than 25 percent at 50 inches below the top of the Bt horizon. The calcium-magnesium ratio is less than 1.

#### A horizon

*Hue:* 10YR
*Value:* 3 or 4
*Chroma:* 2 to 4
*Color features*: A horizons with value of 3, are less than 6 inches thick. In cultivated areas, the Ap horizon has hue of 10YR, value of 5, and chroma of 3 or 4; or with hue of 7.5YR, value 5, and chroma of 4.
*Texture:* Very fine sandy loam
*Reaction*: Very strongly acid to moderately acid

#### E horizon

*Hue:* 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 3 or 4
*Texture:* Very fine sandy loam
*Reaction*: Very strongly acid to moderately acid
*Other features*: Combined thickness of the A and E horizons ranges from 4 to 17 inches

#### Bt horizon (upper part)

*Hue:* 2.5YR to 10YR
*Value:* 3 to 5
*Chroma:* 6 to 8
*Color features:* Some pedons have a value of 5, and chroma 6 or 8; or with hue of 10R or 2.5YR, value of 3, and chroma of 6; or value of 4 or 5, and chroma of 6 or 8.
*Redoximorphic depletions:* Iron depletions in shades of brown or gray range from none to common
*Texture:* Clay loam, silty clay, or clay
*Reaction*: Extremely acid to strongly acid

**Bt horizon (lower part)**

*Hue:* 5YR
*Value:* 4
*Chroma:* 6
*Color features:* Some pedons have value of 5, and chroma of 6 or 8; or hue of 2.5YR, value of 3, and chroma of 6, or value of 4 or 5, and chroma 6 or 8.
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from none to many
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to many, or the horizon is variegated in shades of red, brown, or gray
*Texture:* Clay loam, silty clay, or clay
*Reaction*: Extremely acid to strongly acid

**Btg horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 1 or 2
*Color features:* Some pedons have hue of 2.5Y, value of 5 or 6, and chroma of 2.
*Redoximorphic depletions:* Iron concentrations in shades of red or brown range from few to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to common
*Texture:* Loam, clay loam, or silty clay loam
*Reaction*: Extremely acid to strongly acid

**BC horizon (where present)**

*Color features:* Variegated in shades of red, brown, or gray. These colors range from being about equal, to either the gray or the red being dominant.
*Texture:* Very fine sandy loam, loam, sandy clay loam, silty clay loam, or clay loam
*Reaction*: Extremely acid to strongly acid

**C horizon (where present)**

*Color features:* Variegated in shades of red, brown, or gray and is stratified. These colors range from about equal to either the gray or red being dominant.
*Texture:* Sandy loam, fine sandy loam, very fine sandy loam, silt loam, loam, sandy clay loam, or silty clay loam
*Reaction*: Extremely acid to strongly acid

**Cd horizon**

*Color features:* Gray with red and brown iron concentrations, or variegated in shades of red, brown, and gray.
*Texture:* Loamy fine sand, fine sandy loam, or very fine sandy loam
*Reaction*: Extremely acid to strongly acid

## Sailes Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Hillslope position*: Summit, shoulder
*Parent material*: Loamy marine deposits
*Geology*: Queen City Sand Formation
*Drainage class:* Well drained

*Permeability class:* Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 1 to 5 percent

### *Associated Soils*

- Bowie soils have more than 5 percent plinthite.
- Briley soils have sandy epipedon more than 20 inches.
- Cuthbert soils have fine coated sections, and occur on side slopes.
- Elrose soils have more than 35 percent base saturation.
- Kirvin soils have fine control section, and occur on ridgetops.
- Kullit soils have gray colors within 20 inches of the surface.
- Lilbert soils have sandy epipedon more than 20 inches.
- Tenaha soils have sandy epipedon more than 20 inches.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Typic Paleudults

### *Typical Pedon*

Sailes fine sandy loam (fig. 24) in an area of Sailes fine sandy loam, 1 to 5 percent slopes; located from the intersection of U.S. Highway 59 and Texas Highway 96 in Queen City; 1.9 miles northwest on Texas Highway 96; 1.4 miles west and northwest on County Road 3437; and 120 feet north in pasture. Atlanta North, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 10 minutes, 42.80 seconds N., and Longitude—94 degrees, 11 minutes, 42.80 seconds W.

Ap—0 to 6 inches; brown (10YR 5/3), fine sandy loam; moderate fine subangular blocky structure; very friable, slightly hard; many very fine and medium roots; many fine and medium, and coarse vesicular pores; 1 percent fine and medium ironstone nodules; very strongly acid; clear smooth boundary.

Bt1—6 to 13 inches; yellowish red (5YR 5/6), sandy clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; friable, hard when dry; common medium and many very fine roots; many fine, medium, and coarse pores; few faint clay films; 2 percent fine and medium iron-manganese concretions; 1 percent fine and medium ironstone nodules; 5 percent medium wormcasts; few fine distinct light yellowish brown (10YR 6/4) albic intrusions; strongly acid; clear smooth boundary.

Bt2—13 to 28 inches; red (2.5YR 4/6), sandy clay loam; moderate coarse prismatic structure parting to moderate fine subangular blocky; friable, hard when dry; common medium and many very fine roots; many fine and medium, and common coarse vesicular pores; few faint clay films; 1 percent fine iron-manganese concretions; 1 percent fine ironstone nodules; 2 percent medium wormcasts; moderately acid; gradual smooth boundary.

Bt3—28 to 52 inches; red (2.5YR 4/8), sandy clay loam; moderate coarse prismatic structure parting to moderate fine subangular blocky; friable, hard when dry; many very fine roots; many fine and medium vesicular pores; few faint clay films; 1 percent fine iron-manganese concretions; 1 percent fine ironstone nodules; few fine and medium prominent brownish yellow (10YR 6/8) albic intrusions; very strongly acid; gradual wavy boundary.

Bt4—52 to 63 inches; red (2.5YR 4/8), sandy clay loam; moderate coarse prismatic structure parting to moderate fine and medium subangular blocky; friable, hard when dry; many very fine roots; common fine and medium vesicular pores; few faint clay films; 3 percent very pale brown (10YR 7/4) skeletans; 1 percent fine spherical iron-manganese concretions; common fine and medium prominent

**Figure 24.—Profile of Sailes fine sandy loam, 1 to 5 percent slopes. The red subsoil has a sandy clay loam texture.**

brownish yellow (10YR 6/8) albic intrusions; about 10 percent of the matrix is slightly brittle; very strongly acid; gradual wavy boundary.

Bt5—63 to 72 inches; yellowish red (5YR 5/6), sandy clay loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable, hard when dry; common very fine and common fine roots; common fine and medium vesicular pores; 2 percent very pale brown (10YR 7/4) skeletans; few faint clay films; 1 percent fine spherical iron-manganese concretions; common fine and medium prominent brownish yellow (10YR 6/8) albic intrusions; about 30 percent of the matrix is slightly brittle; strongly acid; gradual wavy boundary.

Bt6—72 to 80 inches; strong brown (7.5YR 5/8), sandy clay loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable, hard when dry; common very fine roots; common fine and medium vesicular pores; few faint strong brown (7.5YR 4/6) clay films on faces of peds and in pores; 3 percent very pale brown (10YR 7/4) skeletans; 10 percent fine and medium prominent red (2.5YR 4/6) masses of oxidized iron; about 50 percent of matrix is slightly brittle; about 2 percent brownish yellow (10YR 6/8) weathered glauconitic material; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 80 inches
*Clay content in the control section:* 18 to 35 percent

#### A or Ap horizon

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 1 to 4

*Texture:* Fine sandy loam
*Coarse fragments:* Ironstone nodules less than 3 inches across range from 0 to 15 percent.
*Reaction:* Very strongly acid to moderately acid, unless limed
*Other features*: Thickness ranges from 3 to 9 inches

**E horizon (where present)**

Hue or 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 2 to 6
*Texture:* Loamy sand, loamy fine sand, sandy loam, fine sandy loam, or very fine sandy loam
*Coarse fragments:* Ironstone nodules less than 3 inches across range from 0 to 15 percent.
*Reaction:* Very strongly acid to moderately acid, unless limed

**EB or BE horizon (where present)**

Hue or 7.5YR or 10YR
*Value:* 5 or 6
*Chroma:* 2 to 6
*Texture:* Loamy sand, loamy fine sand, sandy loam, fine sandy loam, or very fine sandy loam
*Coarse fragments:* Ironstone nodules less than 3 inches across range from 0 to 15 percent.
*Reaction:* Very strongly acid to moderately acid, unless limed
*Other features*: Combined thickness of the E, EB, or BE horizons ranges from 0 to 12 inches

**Bt horizon (upper part)**

*Hue:* 10R to 5YR
*Value:* 4 or 5
*Chroma:* 3 to 8
*Texture:* Loam, clay loam, or sandy clay loam
*Coarse fragments:* Ironstone nodules less than 3 inches across range from 0 to 15 percent.
*Other features*: Albic intrusions in shades of brown or yellow range from none to common
*Reaction:* Extremely acid to moderately acid

**Bt horizon (lower part)**

*Hue:* 10R to 7.5YR
*Value:* 4 or 5
*Chroma:* 4 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, yellow, or pink range from none to many. Some horizons are variegated in these colors. Up to 5 percent iron-manganese concretions are in the Bt horizon in some pedons.
*Texture:* Loam, sandy clay loam, or clay loam
*Other features:* Albic intrusions in shades of red, brown, yellow, gray, or pink range from none to many. Few skeletans, brittle masses, weathered glauconitic material, or shale fragments are in the lower parts of the Bt horizon in some pedons. Combined thickness of the Bt horizons is more than 49 inches.
*Reaction:* Extremely acid to moderately acid

**2Bt horizon (where present)**

*Hue:* 2.5YR to 10R
*Value:* 3 or 4
*Chroma:* 2 to 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, yellow, or pink range from none to many
*Texture:* Loam, sandy clay loam, or clay loam

*Other features:* Albic intrusions in shades of red, brown, yellow, gray, or pink range from none to many
*Reaction:* Extremely acid to moderately acid

## Sardis Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Somewhat poorly drained
*Permeability* class: Moderate
*Soil depth class:* Very deep
*Shrink-swell potential*: Low
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bibb soils have coarse-loamy coastal section.
- Cypress soils have fine control sections, and are very poorly drained.
- Manco soils are wetter, and occur on slightly lower positions.
- Mantachie soils have a fine-loamy control section.
- Socagee soils have a dominant chroma of 1.

### *Taxonomic Classification*

Fine-silty, siliceous, active, thermic Fluvaquentic Dystrudepts

### *Typical Pedon*

Sardis loam in an area of Sardis-Manco complex, frequently flooded; located from the intersection of Farm Road 727 and Texas Highway 49 in Gray; 2.3 miles northwest on Texas Highway 49 in Gethsemane; 1.2 miles south on County Road; 300 feet east on dirt County Road; and 50 feet south in flood plain. Trees, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 47 minutes, 3.65 seconds N., and Longitude—94 degrees, 6 minutes, 29.09 seconds W.

A—0 to 5 inches; brown (10YR 4/3), loam; 4 percent medium distinct pale brown (10YR 6/3) lithochromic mottles; weak fine and medium subangular blocky structure; many fine and medium, and common coarse roots; 15 percent fine and medium distinct strong brown (7.5YR 4/6), and 10 percent medium prominent reddish brown (5YR 4/4) masses of oxidized iron; very strongly acid; clear wavy boundary.

Bw1—5 to 12 inches; dark yellowish brown (10YR 4/4), silt loam; 4 percent medium and coarse faint pale brown (10YR 6/3) mottles; weak fine and medium subangular blocky structure; friable; many fine and medium, and common coarse roots; 18 percent fine distinct strong brown (7.5YR 4/6), and 8 percent fine and medium prominent yellowish red (5YR 4/6) masses of oxidized iron; common fine iron stains; very strongly acid; clear wavy boundary.

Bw2—12 to 21 inches; dark yellowish brown (10YR 4/4), silt loam; weak fine and medium subangular blocky structure; friable; 10 percent medium distinct strong brown (7.5YR 4/6) masses of reduced iron; 6 percent medium distinct gray (10YR 5/1) masses of reduced iron; common fine iron stains; very strongly acid; gradual wavy boundary.

Bw3—21 to 36 inches; dark yellowish brown (10YR 4/4), silt loam; weak fine and medium subangular blocky structure; friable; 5 percent medium distinct strong

brown (7.5YR 4/6) masses of oxidized iron; 10 percent fine and medium distinct light brownish gray (10YR 6/2) masses of reduced iron; common fine iron stains and concretions; very strongly acid; gradual wavy boundary.

Bw4—36 to 51 inches; yellowish brown (10YR 5/4), silt loam; weak fine and medium subangular blocky structure; friable; 4 percent medium faint dark yellowish brown (10YR 3/4) masses of oxidized iron; 20 percent coarse distinct light brownish gray (10YR 6/2) masses of reduced iron; common fine iron stains and concretions; very strongly acid; clear smooth boundary.

C1—51 to 63 inches; yellowish brown (10YR 5/4), strong brown (7.5YR 5/6), light brownish gray (10YR 6/2), and grayish brown (10YR 5/2), sandy loam; massive; very friable; dark yellowish brown (10YR 3/4) iron-manganese concretions; few lenses light gray (10YR 7/2) loamy fine sand 1 to 3 millimeters thick; very strongly acid; gradual wavy boundary.

C2—63 to 73 inches; strong brown (7.5YR 4/6), light gray (10YR 7/1), light brownish gray (10YR 6/2), and yellowish brown (10YR 5/8), sandy loam; massive; very friable; few dark yellowish brown (10YR 3/4) iron stains; few horizontal bands of loamy material; very strongly acid; gradual wavy boundary.

Cg—73 to 80 inches; light gray (10YR 7/2), sandy loam; massive; very friable; 20 percent coarse distinct dark yellowish brown (10YR 3/4) masses of oxidized iron; 2 percent fine iron-manganese concretions; 1 percent fine ironstone nodules; pockets of very dark brown (10YR 2/2) organic stain and residue; very strongly acid.

### *Range in Characteristics*

*Solum thickness:* More than 60 inches
*Clay content in the control section:* 18 to 30 percent
*Redoximorphic features:* Iron depletions with chroma of 2 or less, occur at depths of 8 to 24 inches. Iron concentrations and depletions are in shades of brown, yellow, or gray.
*Other features:* Sand content coarser than very fine sand ranges from about 10 to 15 percent in the control section.

#### A horizon

*Hue:* 10YR
*Value*: 4 or 5
*Chroma:* 2 to 4
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from none to common
*Texture:* Loam
*Reaction:* Very strongly acid to moderately acid, except where limed

#### Bw horizon

Hues: 7.5YR or 10YR
*Value:* 4 to 6
*Chroma:* 3 to 8
*Redoximorphic concentrations*: Iron concentrations in shades of brown and yellow range from few to many
*Redoximorphic depletions:* Iron depletions with chroma of 2 or less, occur at depths of 8 to 24 inches, and depletions in shades of gray range from few to many
*Texture:* Silt loam, silty clay loam, or clay loam
*Reaction:* Very strongly acid to moderately acid

#### C or Cg horizon

*Colors*: Variable, ranging in shades of brown to gray
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellowish brown range from few to many

*Redoximorphic depletions*: Iron depletions in shades of gray range from few to many
*Texture:* Sandy loam, loam, or silt loam
*Coarse fragments:* Gravel ranges from 0 to 5 percent
*Reaction:* Very strongly acid or strongly acid

## Socagee Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Flood plain
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Poorly drained
*Permeability class:* Moderately slow
*Soil depth class:* Very deep
*Shrink-swell potential*: Moderate
*Slope*: 0 to 1 percent

### *Associated Soils*

- Bibb soils have a coarse-loamy control sections.
- Cypress soils have fine control section, and are very poorly drained.
- Gladewater soils have very-fine control sections.
- Iulus soils have a coarse-loamy control sections.
- Manco soils have cambic horizons.
- Mantachie soils have a fine loamy control sections.
- Mooreville have fine-loamy control sections.
- Sardis soils have a brown cambic horizon.

### *Taxonomic Classification*

Fine-silty, siliceous, active, acid, thermic Fluvaquentic Epiaquepts

### *Typical Pedon*

Socagee silty clay loam in an area of Socagee silty clay loam, frequently flooded, in hardwoods; located from the intersection of Farm Road 251 and Farm Road 3129 in Cass; 4.2 miles north Farm Road 3129; 1.0 miles east on County Road 3884; 0.4 mile south on County Road 3885 (Peggy Lane) to flood plain; and 12 feet west in flood plain. Bloomburg, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 13 minutes, 20.00 seconds N., and Longitude—94 degrees, 4 minutes, 58.00 seconds W.

A1—0 to 2 inches; brown (10YR 4/3), silty clay loam; weak fine subangular blocky structure parting to moderate fine granular; friable; many fine and medium, and few coarse roots; very strongly acid; clear smooth boundary.

A2—2 to 5 inches; grayish brown (10YR 5/2), silty clay loam; weak fine subangular blocky structure; friable; many fine and medium, and few coarse roots; 10 percent fine prominent yellowish red (5YR 5/8), and 8 percent medium and coarse faint dark yellowish brown (10YR 4/4) masses of oxidized iron; very strongly acid; clear smooth boundary.

Bg1—5 to 17 inches; gray (10YR 6/1), silt loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; few fine and medium roots; few fine and medium pores; 20 percent medium and coarse distinct strong brown (7.5YR 5/8), and 5 percent fine prominent yellowish red (5YR 5/8) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bg2—17 to 38 inches; gray (10YR 6/1), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; 4 percent medium and coarse strong brown (7.5YR 5/8), and 1 percent medium faint brownish yellow (10YR 6/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Bg3—38 to 44 inches; gray (10YR 6/1), clay loam; moderate medium subangular blocky structure; firm; 4 percent medium distinct yellowish red (5YR 5/8), and 1 percent medium distinct reddish brown (2.5YR 5/4) masses of oxidized iron; very strongly acid; gradual wavy boundary.

Bg4—44 to 60 inches; gray (10YR 5/1), clay loam; moderate medium subangular blocky structure; firm; 20 percent medium and coarse prominent yellowish red (5YR 5/8) masses of oxidized iron; few strata gray (10YR 6/1) silty loam; few fine pieces of charcoal; very strongly acid; gradual wavy boundary.

BCg—60 to 80 inches; grayish brown (10YR 5/2), silty clay loam; 1 percent medium distinct pale red (2.5YR 6/2) mottles; moderate medium subangular blocky structure; firm; 1 percent medium distinct strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid.

### ***Range in Characteristics***

*Solum thickness:* 60 to more than 80 inches
*Clay content in the control section:* 20 to 35 percent
*Redoximorphic features:* Iron concentrations in shades of red, brown, or yellow, and iron depletions in shades of gray are throughout the subsoil.
*Other features:* Clean sand and silt coatings comprise 0 to 4 percent by volume throughout the solum.
*Concentrated minerals:* Black concretions and soft masses range from 0 to 4 percent by volume throughout. Soft masses and concretions of barite range from none to few below a depth of 40 inches.

#### A horizon

*Hue:* 10YR
*Value:* 4 to 6
*Chroma:* 1 to 3
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from none to many
*Texture:* Silty clay loam
*Reaction:* Very strongly acid, unless limed

#### A2 horizon

*Hue:* 10YR
*Value:* 4 to 6
*Chroma:* 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from none to many
*Texture:* Silty clay loam
*Reaction:* Very strongly acid, unless limed

#### Bg horizon

*Hue:* 10YR
*Value:* 5 to 7
*Chroma:* 1 or 2
*Color features*: Some pedons have value of 5 and chroma of 1; or values of 5 and chroma of 2 below a depth of 40 inches
*Redoximorphic features:* Iron concentrations in shades of red, brown, or yellow range from few to many

*Redoximorphic depletions*: Iron depletions in shades of gray range from few to many
*Texture:* Silt loam, silty clay loam, or clay loam
*Reaction:* Extremely acid to strongly acid in the particle-size control section; and very strongly acid to neutral below a depth of 40 inches.

**BCg horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 2 or 3
*Redoximorphic features:* Iron concentrations in shades of red, brown, or yellow range from few to many
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to many
*Texture:* Loam, clay loam, or silty clay loam
*Reaction:* Very strongly acid to neutral

## Tenaha Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Interfluve
*Geomorphic component*: Side slopes adjacent to drainageway
*Parent material*: Loamy marine deposits derived from sandstone and shale
*Geology*: Queen City Sand Formation
*Drainage class:* Well drained
*Permeability class:* Moderately slow
*Soil depth class:* Deep to densic material
*Shrink-swell potential*: Low
*Slope*: 1 to 15 percent

### *Associated Soils*

- Bowie soils have loamy surfaces less than 20 inches.
- Briley soils have sola of more than 60 inches.
- Cuthbert soils have fine control sections.
- Darco soils have a sandy epipedon more than 40 inches thick.
- Duffern soils are sandy throughout.
- Iulus soils have cambic horizons.
- Kirvin soils have fine control sections.
- Lilbert soils have more than 5 percent plinthite.
- Redsprings soils have fine control sections.
- Rentzel soils have sola more than 60 inches.
- Sailes soils have fine-loamy control sections.

### *Taxonomic Classification*

Loamy, siliceous, semiactive, thermic Arenic Hapludults

### *Typical Pedon*

Tenaha loamy fine sand in an area of Tenaha loamy fine sand, 5 to 15 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Farm Market 729 and Farm Market 726; 2.5 miles south on Farm Market 726 to Lake O' the Pines Headquarters; 0.1 mile northwest on Lake Road; and 100 feet east in woods. Kellyville, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 45 minutes, 12.80 seconds N., and Longitude—94 degrees, 29 minutes, 45.00 seconds W.

A—0 to 3 inches; brown (10YR 4/3), loamy fine sand; weak fine granular structure; very friable; many fine to coarse roots; strongly acid; clear smooth boundary.
E1—3 to 14 inches; yellowish brown (10YR 5/4), loamy fine sand; weak fine granular structure; very friable; many fine to coarse roots; strongly acid; clear wavy boundary.
E2—14 to 24 inches; yellowish brown (10YR 5/4), loamy fine sand; weak fine granular structure; friable; many fine and medium, and common coarse roots; strongly acid; clear wavy boundary.
Bt1—24 to 35 inches; yellowish red (5YR 5/6), clay loam; moderate fine and medium subangular blocky structure; firm; many fine, common medium, and few coarse roots; few faint clay films on faces of peds; 3 percent mica flakes; very strongly acid; gradual wavy boundary.
Bt2—35 to 43 inches; yellowish red (5YR 5/6), sandy clay loam; weak fine and medium subangular blocky structure; firm; common fine and few medium roots; few faint clay films on faces of peds; extremely acid; clear wavy boundary.
BCt—43 to 55 inches; strong brown (7.5YR 5/6), sandy clay loam; weak fine and medium subangular blocky structure; firm; few fine roots; few faint clay films on bottoms of plates; common medium distinct pinkish gray (7.5YR 6/2) and light gray (10YR 7/1) shale fragments; extremely acid; clear wavy boundary.
Cd—55 to 80 inches; pinkish gray (7.5YR 6/2), light gray (10YR 7/1), and strong brown (7.5YR 5/6), sandy clay loam; massive; firm; few fine roots; 3 percent mica flakes; stratified lenses of fractured shale and sandstone; extremely acid.

### *Range in Characteristics*

*Solum thickness:* 40 to 60 inches
*Clay content in the control section:* 23 to 35 percent
*Other features:* Quartzite and ironstone pebbles range from 0 to 14 percent by volume throughout
*Reaction:* Very strongly acid to moderately acid in the A and E horizons, and extremely acid to strongly acid in the Bt, BCt, C, and Cd horizons.

**A horizon**

*Hue:* 7.5YR or 10YR
*Value:* 3 to 5
*Chroma:* 2 to 4
*Texture:* Loamy fine sand

**E horizon**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 7
*Chroma:* 2 to 4
*Texture:* Loamy fine sand

**EB horizon (where present)**

*Hue:* 7.5YR or 10YR
*Value:* 4 to 7
*Chroma:* 6 or 8
*Texture:* Fine sand or loamy fine sand
*Other features*: Combined thickness of the A, E, and BE horizons ranges from 20 to 40 inches

**Bt horizon**

*Hue:* 5YR to 10YR
*Value:* 4 to 6

*Chroma:* 6 or 8
*Color features*: Some pedons are mixed with these colors as well as red iron concentrations with hue of 2.5YR
*Redoximorphic concentrations:* Relict iron concentrations in shades of red with hue 2.5YR range from few to many
*Texture:* Fine sandy loam, sandy clay loam, or clay loam
*Other features:* Remnants of weathered shale range from 0 to 5 percent by volume. Some pedons have mica flakes in the lower part.

**BCt horizon**

*Color features:* Shades of red, yellow, and brown matrix, or it is stratified with these colors.
*Texture:* Fine sandy loam or sandy clay loam, with or without strata of shale or sandstone
*Other features:* Discontinuous strata or pockets of gray weathered shale range from none to 15 percent by volume. Most pedons contain few to common mica flakes.

**C or Cd horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5 to 7
*Chroma:* 1 or 6
*Color features:* Loamy materials and sandstone are in shades of red, yellow, or brown. The shale materials are mainly in shades of gray with a clay loam or clay texture.
*Texture:* Stratified weakly consolidated sandstone of sandy clay loam texture, and shale soil materials.
*Other features:* The amount of shale material is variable and is absent in some pedons. Roots penetrate these materials but are concentrated along fractures or cleavage planes. The material slakes in water. Most pedons have clay flows along some vertical fractures. Many pedons have discontinuous, fractured, strongly cemented, or indurated sandstone or ironstone layers about 1 inch to 4 inches thick. They appear to have the slope of an ancient surface gradient, and occur within the argillic horizon of some pedons.

## Thage Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberland
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Geomorphic component*: Tread
*Parent material*: Loamy alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Somewhat poorly drained
*Permeability* class*:* Moderately slow
*Soil depth class:* Moderately deep to a fragipan layer
*Shrink-swell potential*: Low
*Slope*: 0 to 2 percent

### *Associated Soils*

- Bowie soils have 5 percent plinthite, and occur on higher positions.
- Erno soils are well drained, and occur on slightly higher positions.

### *Taxonomic Classification*

Fine-loamy, siliceous, semiactive, thermic Fragiaquic Paleudalfs

### *Typical Pedon*

Thage fine sandy loam in an area of Erno-Thage complex, 0 to 2 percent slopes, in intermixed conifers and hardwoods; located from the intersection of Farm Market 251 and Farm Market 1841 in Huffines; 3.5 miles east and north on Farm Market 1841; 1.8 miles east on County Road 4670; 0.5 mile south on County Road 4671; 400 feet southwest on Farm Road; and 20 feet south of road. Ravanna, Texas USGS 7.5 Minute Quadrangle; Latitude—33 degrees, 2 minutes, 30.40 seconds N., and Longitude—94 degrees, 5 minutes, 50.60 seconds W.

A—0 to 2 inches; brown (10YR 4/3), fine sandy loam; weak fine subangular blocky structure; friable; many fine and medium roots; moderately acid; clear smooth boundary.

E—2 to 8 inches; brown (10YR 5/3), fine sandy loam; weak fine subangular blocky structure; friable; many fine and medium roots; common medium and coarse distinct strong brown (7.5YR 5/6) masses of oxidized iron along roots; common medium and coarse faint light brownish gray (10YR 6/2) redoximorphic depletions; moderately acid; clear smooth boundary.

Bt1—8 to 17 inches; yellowish brown (10YR 5/6), loam; weak fine and medium subangular blocky structure; friable; few faint clay films; 5 percent medium faint brownish yellow (10YR 6/6), 5 percent medium faint brownish yellow (10YR 6/6), and 1 percent medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; clear smooth boundary.

Bt2—17 to 34 inches; yellowish brown (10YR 5/6), clay loam; moderate medium subangular blocky structure; firm; few faint clay films; 5 percent medium prominent red (2.5YR 5/6) masses of oxidized iron; 5 percent medium faint light brownish gray (10YR 6/2), and 5 percent coarse faint light brownish gray (10YR 6/2) iron depletions; 2 percent plinthite nodules; 5 percent brittle bodies; strongly acid; clear wavy boundary.

Btx/E1—34 to 43 inches; yellowish brown (10YR 5/6), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; many coarse pores; 1 percent medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; 5 percent medium faint light brownish gray (10YR 6/2) iron depletions; 10 percent light brownish gray (10YR 6/2) albic intrusion; 65 to 70 percent brittle bodies; strongly acid; clear wavy boundary.

Btx/E2—43 to 49 inches; yellowish brown (10YR 5/6) and grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; 20 percent clay films; 5 percent medium prominent red (2.5YR 5/6) masses of oxidized iron; 5 percent medium faint light brownish gray (10YR 6/2) iron depletions; 10 percent light brownish gray (10YR 6/2) albic intrusion; strongly acid; clear wavy boundary.

Btx/E3—49 to 58 inches; grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few faint clay films; 5 percent coarse prominent yellowish brown (10YR 5/6), and 5 percent medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; 20 percent brittle bodies; 10 percent light brownish gray (10YR 6/2) albic intrusions; strongly acid; clear wavy boundary.

BCg1—58 to 68 inches; grayish brown (10YR 5/2), clay loam; weak medium subangular blocky structure; firm; 5 percent medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; strongly acid; clear wavy boundary.

BCg2—68 to 80 inches; grayish brown (10YR 5/2), silty clay loam; weak medium subangular blocky structure; firm; 5 percent medium prominent brownish yellow (10YR 6/8), and 1 percent medium prominent red (2.5YR 4/6) masses of oxidized iron; strongly acid.

### *Range in Characteristics*

*Solum thickness*: More than 60 inches
*Depth to the fragipan*: Ranges from 25 to 40 inches below the surface

**A horizon**

*Hue:* 10YR
*Value:* 3 or 5
*Chroma: 2* or 3
*Texture:* Fine sandy loam
*Reaction:* Strongly acid to slightly acid
*Other features*: Combined thickness of the A and E horizons ranges from 5 to 20 inches

**E horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 3 or 4
*Redoximorphic concentrations:* Iron concentrations in shades of brown and yellow range from none to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from none to common
*Texture:* Fine sandy loam
*Reaction:* Very strongly acid to slightly acid

**Bt horizon**

*Hue:* 7.5YR or 10YR
*Value:* 5
*Chroma:* 6 or 8
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, and yellow range from none to common
*Redoximorphic depletions*: Iron depletions in shades of yellow and gray range from none to common
*Texture:* Fine sandy loam, loam, or sandy clay loam
*Reaction:* Very strongly acid to moderately acid

**Btx/E horizon**

*Hue:* Bt part—7.5YR or 10YR; E part—10YR
*Value:* Bt part—5 or 6; E part—5 or 6
*Chroma:* Bt part—2 to 8; E part—1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of red, brown, and yellow range from few to many
*Redoximorphic depletions*: Iron depletions in shades of yellow and gray range from few to many
*Texture:* Fine sandy loam, loam, or sandy clay loam
*Reaction:* Very strongly acid to moderately acid
*Other features:* 20 to 70 percent of the horizon is brittle; plinthite ranges from 0 to 5 percent.

**BCg horizon**

*Hue:* 10YR
*Value:* 5 or 6
*Chroma:* 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown or yellow range from few to common
*Texture:* Loam, sandy clay loam, or clay loam
*Reaction:* Strongly acid to slightly acid

## Wrightsville Series

*MLRA*: 133B—Western Coastal Plain
*Local physiographic area:* East Texas Timberlands
*Landscape:* Coastal plain
*Landform:* Stream terrace
*Microfeature:* Open depression
*Parent material*: Silty and clayey alluvium derived from sedimentary rock
*Geology*: Alluvium
*Drainage class:* Poorly drained
*Permeability class:* Very slow
*Soil depth class:* Very deep
*Shrink-swell potential*: High
*Slope*: 0 to 1 percent

### *Associated Soils*

- Eastwood soils do not have wet features, and occur on higher breaks.
- Eylau soils have fine-loamy control sections, and occur on higher positions.
- Guyton soils have fine-silty control sections.
- Latch soils have loamy control sections and thick sandy surfaces.
- Latex soils have fine-loamy control sections.
- Metcalf soils have fine-silty control sections.
- Mollville soils have fine-loamy control sections.

### *Taxonomic Classification*

Fine, mixed, active, thermic Typic Glossaqualfs

### *Typical Pedon*

Wrightsville silt loam in an area of Wrightsville silt loam, 0 to 1 percent slopes, ponded, in intermixed conifers and hardwoods; located from the intersection of Texas Highway 43 and Texas Highway 49 in Smithland; 2.6 miles south on Texas Highway 43; and 150 feet east in woods. Smithland, Texas USGS 7.5 Minute Quadrangle; Latitude—32 degrees, 46 minutes, 30.66 seconds N., and Longitude—94 degrees, 10 minutes, 52.61 seconds W.

A—0 to 3 inches; dark grayish brown (10YR 4/2), silt loam; 10 percent fine pale brown (10YR 6/3) mottles; weak fine and medium subangular blocky parting to weak medium granular; friable, slightly hard; many fine and medium, and common coarse roots; common fine tubular pores; 20 percent strong brown (7.5YR 4/6) iron stains; extremely acid; clear wavy boundary.

Eg—3 to 11 inches; light brownish gray (10YR 6/2), silt loam; weak coarse prismatic structure parting to weak fine and medium subangular blocky; friable, slightly hard; many fine, many medium, and common coarse roots; many fine tubular pores; 5 percent strong brown (7.5YR 4/6) iron stains; 20 percent medium prominent strong brown (7.5YR 5/6), and 20 percent medium faint brown (10YR 5/3) masses of oxidized iron; 1 percent medium iron-manganese concretions; very strongly acid; gradual wavy boundary.

Btg/E1—11 to 19 inches; grayish brown (10YR 5/2), silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm, hard; many fine and medium, and common coarse roots; common fine and medium tubular pores; common distinct clay films; 2 percent gray (10YR 5/1) pressure faces; 2 percent strong brown (7.5YR 4/6) iron stains; 5 percent medium strong brown (7.5YR 5/6) masses of oxidized iron; 1 percent medium iron-manganese concretions; 25 percent light gray (10YR 7/2) silt loam (E material); common (10YR 4/2, 6/2 and 6/3)

coatings and albic intrusions of silt loam and very fine sandy loam in krotovinas; very strongly acid; clear irregular boundary.

Btg/E2—19 to 35 inches; dark grayish brown (10YR 4/2), silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; very firm, extremely hard; common fine to coarse roots between peds; common fine and medium tubular pores; common distinct clay films; 2 percent gray (10YR 5/1) pressure faces; 2 percent strong brown (7.5YR 4/6) iron stains; 12 percent fine and medium strong brown (7.5YR 5/6), and 8 percent coarse brownish yellow (10YR 6/6) masses of oxidized iron; 15 percent light gray (10YR 7/2) silt loam (E material); common (10YR 4/2, 6/2 and 6/3) coatings and albic intrusions of silt loam and very fine sandy loam in krotovinas; extremely acid; gradual wavy boundary.

Btg1—35 to 47 inches; dark grayish brown (10YR 4/2), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; very firm, extremely hard; common fine and medium roots between peds; common fine and medium tubular pores; many distinct clay films; 2 percent light gray (10YR 7/2) skeletans; 2 percent gray (10YR 5/1) nonintersecting slickensides; 15 percent medium brownish yellow (10YR 6/6), and 2 percent medium strong brown (7.5YR 5/6) masses of oxidized iron; 3 percent spherical white (10YR 8/1) barite crystals; few (10YR 4/2, 6/4 and 7/2) coatings in krotovinas; extremely acid; clear wavy boundary.

Btg2—47 to 68 inches; grayish brown (10YR 5/2), clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; very firm, extremely hard; common fine and medium roots between peds; common fine and medium tubular pores; many distinct clay films; 7 percent nonintersecting slickensides; 30 percent pressure faces; 20 percent medium and coarse brownish yellow (10YR 6/6), 15 percent medium and coarse red (2.5YR 4/6), 2 percent coarse dark yellowish brown (10YR 4/6), and 2 percent fine and medium strong brown (7.5YR 5/6) masses of oxidized iron; 2 percent spherical white (10YR 8/1) barite crystals; extremely acid; gradual wavy boundary.

Btg3—68 to 80 inches; grayish brown (10YR 5/2), clay; weak coarse prismatic structure parting to moderate medium subangular blocky; very firm, extremely hard; common fine roots between peds; common fine and medium tubular pores; common distinct clay films on faces of peds: 5 percent nonintersecting slickensides; 30 percent pressure faces; 10 percent medium and coarse prominent red (2.5YR 4/8), and 5 percent coarse distinct dark yellowish brown (10YR 4/6), and 2 percent medium distinct brownish yellow (10YR 6/6) masses of oxidized iron; 2 percent medium spherical red (2.5YR 4/8) ironstone nodules; 2 percent spherical white (10YR 8/1) barite crystals; 1 percent gypsum crystals; extremely acid.

### *Range in Characteristics*

*Solum thickness:* 40 to more than 72 inches
*Clay content in the control section:* 35 to 55 percent
*Redoximorphic features:* Depleted matrix with iron concentrations in shades of brown and yellow throughout the solum.

**A or Ap horizon**

*Hue:* 10YR
*Value*: 3 to 5
*Chroma:* 2
*Color features:* The Ap horizon, where present, has hue of 10YR, value of 4 or 5, and chroma of 2
*Redoximorphic features:* Iron concentrations in shades of brown range from few to common
*Texture:* Silt loam
*Reaction:* Extremely acid to strongly acid

**E horizon**

*Hue:* 2.5Y or 10YR
*Value:* 5 to 7
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown range from few to common
*Texture:* Silt loam
*Reaction:* Extremely acid to strongly acid

**Btg/E horizon**

*Hue:* Btg part—10YR; E part—10YR
*Value:* Btg part—4 to 7; E part—5 to 7
*Chroma:* Btg part—1 or 2; E part—1 or 2
*Color features:* Some pedons in the Btg part have hue of 2.5Y, value of 5 to 7, and chroma of 2; some pedons in the E part have hue of 2.5Y, value of 6 or 7, and chroma of 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown and yellow range from few to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to common
*Texture:* Btg part—silty clay loam, silty clay, or clay; E part—silt or silt loam
*Reaction:* Extremely acid to moderately acid

**Btg horizon (upper part)**

*Hue:* 2.5Y or 10YR
*Value:* 4 to 7
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown and yellow range from few to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to common
*Texture:* Silty clay loam, silty clay, or clay
*Reaction:* Extremely acid to moderately acid.

**Btg horizon (lower part)**

*Hue:* 2.5Y or 10YR
*Value:* 4 to 7
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown and yellow range from few to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to common
*Texture:* Silt loam, silty clay loam, or silty clay
*Reaction:* Extremely acid to moderately alkaline

**C horizon (where present)**

*Hue:* 2.5Y or 10YR
*Value:* 4 to 7
*Chroma:* 1 or 2
*Redoximorphic concentrations:* Iron concentrations in shades of brown and yellow range from few to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to common
*Texture:* Silt loam, silty clay loam, or silty clay
*Reaction:* Extremely acid to moderately alkaline

**2C horizon (where present)**

*Color features*: In shades of red
*Redoximorphic concentrations:* Iron concentrations in shades of brown and yellow range from few to common
*Redoximorphic depletions*: Iron depletions in shades of gray range from few to common
*Texture:* Clay or silty clay
*Reaction:* Neutral to moderately alkaline

# Formation of the Soils

In this section the factors of soil formation are described and related to the formation of the soils of Marion and Cass Counties. Also, the processes of soil formation and the surface geology of the county are described.

## Factors of Soil Formation

A soil is a three-dimensional natural body consisting of mineral and organic material that can support plant growth. The nature of any soil at a given site is the result of the interaction of five general factors-parent material, climate, plants and animals, relief, and time. Climate, plants and animals can have an affect on parent material that is modified by relief over time. Theoretically, if all these factors were identical at different sites, the soils at these sites would be identical. Differences among the soils are caused by variations in one or more of these factors.

### Parent Material

Parent material is the unconsolidated mass in which a soil forms. It determines the chemical and mineral composition of the soil. The parent material in Marion and Cass Counties consist of unconsolidated, sandy, loamy, and clayey sediments deposited by water during the Eocene, Pleistocene, and Holocene Epochs.

The Eocene Deposits are the Wilcox Group, Reklaw Formation, Queen City Sand Formation, the Weches Formation, and Sparta Sand Formation.

The Pleistocene deposits are the sediments on the different fluviatile terrace levels in areas along the Big Cypress Bayou, the boundary line between Marion and Cass Counties, and the Sulfur River, the northern boundary line between Cass and Bowie Counties, and along other streams in both counties.

The Holocene deposits include the recent alluvial material on the bottomland along the Sulfur River, and along streams such as Big Cypress Bayou. The soils that formed in these kinds of parent material are identified in the section "Surface Geology".

### Climate

The climate of Marion and Cass Counties is humid. Rainfall, evaporation, and temperature are the main climatic influences. The moderate to large amount of rainfall has promoted moderately rapid soil development throughout the survey area. Rainfall is uniform over the area, although its effect is modified locally by runoff caused by slope. Because of the uniformity in climate, the differences between soils are not attributed to climatic differences.

### Plant and Animal Life

The vegetation under which a soil forms influences soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic matter to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Because of a lower content of organic matter, soils that formed under forest vegetation are generally light colored than those formed under grasses.

Bacteria, fungi, and many other microorganisms decompose organic matter and release nutrients to growing plants. They influence the formation of soil structure. Soil properties, such as drainage, temperature, and reaction, influence the type of microorganisms that live in the soil. Fungi are generally more active in acid soils, while bacteria are more active in less acid and, more alkaline soils.

Earthworms, insects, and small burrowing animals mix the soil and create small channels that aid in the soil aeration and water movement. Earthworms help to incorporate crop residue or other organic matter into the soil. The organic matter improves tilth. In areas that are well populated with earthworms, the leaf litter that accumulates is generally incorporated into the soil by the following spring. If the earthworm population is low, part of the leaf can remain on the surface for several years.

Human activity can significantly influence soil formation. The clearing of native forests followed by continuous farming may drastically change activities within the soil. Cultivation generally accelerates erosion on sloping soils, affects soil structure and compacting, and lowers the content of organic matter. Drainage of wet soil changes soil formation. Fertilizer, lime and pesticide also affect soil formation. Developing land for urban uses or for mining significantly influences soil development.

### Relief

Relief affects soil formation through its influence on drainage, infiltration, and plant cover. It also strongly influences how much water percolates through the soil. Soils on nearly level terraces such as Mollville soils have poor drainage. The strongly sloping to steep Cuthbert soils have thinner solum than the nearby Bowie soils which are very deep and gently sloping. On steeper slopes, water runs off faster, less moisture infiltrates into the soil and plant cover is thinner.

Although most of the soils in Marion and Cass Counties are gently sloping to steep, the development of shallow soils as a result is not common. The abundant rainfall and long warm periods have overcome most of the effects of relief. Nearly all of the soils in the county are deeply developed.

### Time

The length of time that climate, living organisms, and relief act upon the parent material affects the kind of soil that forms. The effects of time are modified by the other four factors of soil formation. In general, however, soils that do not have definite horizons are young or immature. Soils that have well-defined horizons are old or mature.

The soils in Marion and Cass Counties range from young to old. Mantachie, Iulus, and Bibb soils are on flood plains and have little soil horizon development. Bowie, Lilbert, and Kirvin soils in the uplands are older soils that have distinct horizon development and have little resemblance to the original parent material.

## Processes of Horizon Differentiation

Soil forms through complex processes that are grouped into four general categories. These are additions, removals, transfers, and transformations. These processes affect soil formation in differing degrees and account for the presence of soil layers or horizons.

The accumulation of organic matter in the A horizon of the soil in Marion and Cass Counties is an example of an example of an addition. This accumulation is the main reason for the dark color of the A horizon. The color of raw parent material is uniform with increasing depth.

The leaching of lime or bases from the upper few feet in many soils is an example or removal. The parent material of these soils contains more lime or bases than the soils itself. This indicates leaching of the soil profile by percolating water.

The movement of clay and other material from the A horizon to the B horizon is an example of transfer. The E horizon is a zone of maximum eluviation, or loss. The B

horizon is a zone of illuviation, or gain. Sailes, Bowie, and many other soils have maximum clay content in the Bt horizon. An indication of transfer of clay is thin clay films in pores and faces of peds.

An example of transformation is the reduction of ferrous iron. This process takes place under wet conditions in which there is no molecular oxygen. Gleying, or the reduction of iron, is evident in Wrightsville and Mollville soils, which have dominantly gray subsoil. The gray color indicates the presence of reduced iron, which in turn implies wetness. Reduced iron is soluble, but it commonly has been moved only short distances in the soils in the survey area, stopping in a lower part of the horizon where it originated or in an underlying horizon. Parts of this iron can be reoxidized and segregated in the form of stains, concretions, or bright yellow and red accumulations.

# Surface Geology

Marion and Cass Counties lie in the West Gulf Coastal Plain Physiographic Province in which the surface formations dip regionally at very low angles to the Gulf of Mexico. The geology of the area is depicted on the Texarkana and Tyler sheets of the geologic map of Texas.

Tertiary outcrops," bedrock" formations are Paleocene to Eocene in age. Their ages range from about 65 million to about 37 million years before the present, respectively. Quaternary surficial deposits, Pleistocene to Holocene in age, parallel the major streams as terraces and flood plains, respectively. The maximum age of Quaternary deposits is about 2.6 million years old.

The oldest rock in the county is the Paleocene-Eocene age Wilcox Group. The lower part of the Eocene age Claiborne Group overlies the Wilcox Group. Claiborne Group Formations cropping out in Marion and Cass Counties, from oldest to youngest Reklaw Formation, Queen City Sand Formation, Weches Formation, and remnants of the Sparta Sand Formation. Most of the county is on the western flank of the Sabine Uplift. The uplift has elevated and exposed areas of the older Wilcox Group and Reklaw Formation as inliers.

The relationship between Tertiary "bedrock" formations and Quaternary deposits and their superincumbent soils is complex. Some formations lack definitive or unique lithologies. Some soils sola, even C horizon material, may be genetically unrelated to the underlying formations. The uppermost strata in which the soils have developed may be late Tertiary or Quaternary age, and may be eolian, colluvial, or fluvial origin.

The majority of Marion and Cass Counties drains into Big Cypress Bayou.

## Wilcox Group

The Wilcox Group is not divided into several formations on the geologic maps as it is elsewhere in east central Texas.

The Wilcox Group is described as consisting of quartz sands, silt, clays, lignite, and subordinate quantities of glauconite, where present. Glauconite is a fine-grained green hydroxalated iron and potassium mineral-bearing aluminum silicate. Glauconite is an indicator of marine depositional environment. Consequently, the presence of glauconite at the top of the Wilcox Group is an indication of the "Sabinetown Formation" stratum. The sands are fluvial channels and point bar origin; the silts are of fluvial overbank origin. Most of the Wilcox Group in Marion and Cass Counties belongs to the fluvial overbank facies which encloses a few narrow elongated southwest-trending channel sand deposits. These sediments were laid down by the early Tertiary age Mount Pleasant Fluvial System flowing from the north and east.

A major part of the Wilcox Group outcropped areas in Marion and Cass Counties is overlain by the Metcalf of the general soil map unit. This area is in the southeastern part of Marion County above Big Cypress Bayou, and in the northern part of Cass County outcropping above Lake Texarkana and the Sulfur River. The clay and shale parent materials of most soils in the Eastwood-Latex-Metcalf general soil map units are

consistent with flood basin or overbank fluvial origin. The minor parts of the Wilcox Group outcrop area are covered by the Tenaha-Lilbert-Darco general soil map units, with their sandy parent materials, which indicate a fluvial channel facies origin.

## Reklaw Formation

The lower part of the Reklaw Formation, the Newby Member, is shallow-water marine or marine shelf in origin and consists of carbonaceous clays and glauconitic sands with marine macrofossils. The upper part of the deltaic and near-shore origin. The Marquez Member, is composed mainly of clay and silty clay with thin, locally glauconitic, cross-bedded sand. The scattered areas of Reklaw Formation outcrops are in the northern part of Cass County above Lake Texarkana and the Sulfur River. It also occurs in the southeastern part of Marion County from the city of Jefferson east to the Louisiana State line overlying the Wilcox Group that outcrop on Big Cypress Bayou.

Most of the Reklaw Formation in Marion and Cass Counties overlies the Wilcox Group. The traditional topographic sequence of overlying the Carrizo Formation, which is transitional or omitted and is not represented on the geologic maps. The Reklaw Formation outcrops underlie small areas of the Cuthbert-Bowie-Kirvin general soil map unit. The soils in this map unit have glauconite, shale, and sand substrates.

## Queen City Sand Formation

The Queen City Sand Formation overlies the Reklaw Formation. The Queen City Sand Formation is exposed on the flanks of the Sabine Uplift through most of Marion and Cass Counties. The formation is of tidal embayment, tidal delta, and barrier island origins. It is mostly sand with minor beds of clay; in some places, it is glauconitic.

The Tenaha-Lilbert-Darco and the Cuthbert-Bowie-Kirvin general soil map units overlie this formation.

## Weches Formation

The Weches Formation overlies the Queen City Sand Formation and consists of marine glauconitic marl, sand, and clay. Areas are outcropped Mainly along U.S. Highway 59 in Marion and Cass Counties just to the north of Linden and surrounding Atlanta. The other areas of outcroppings are along Texas Highway 49 in Marion and in Cass County to Hughes Springs in the northwestern part of the county. The soils that typically overlie the Weches Formation are Cuthbert and Redsprings.

## Sparta Sand Formation

The Sparta Sand Formation overlies the Weches Formation. It is of very limited extent in Marion and Cass Counties. It on the gently undulating tops and rolling side slopes of the Weches Formation escarpments. It consists mainly of fine-grained quartz sand and interbeds of sandy clay. The soils that typically overlie the Sparta Sand Formation are the Lilbert and Briley and the Cuthbert-Bowie-Kirvin of the general soil map unit.

## Pimple Mounds

Pimple mounds are circular to elliptical knolls 10 to 75 feet in diameter, and generally are less than 3 feet in height. In Marion and Cass Counties, pimple mounds are mapped in the Erno-Thage, Gallime-Guyton, and Latch-Mollville map units. The Gallime and Latch soils are the mounded soils. The A and E horizons in mounds generally are thicker than the corresponding horizons of the intermound soils. Similar mounds are found in widely scattered localities west of the Mississippi River. They are located mainly on known Pleistocene age sediments or on thin surficial materials of probable Pleistocene age. They extend southward along the Gulf Coast into northeastern Texas and adjacent Louisiana and northward into southeastern Oklahoma, Arkansas, and southern Missouri.

They are found in isolated areas in northwestern Iowa, northwestern Minnesota, and in parts of New Mexico, Colorado, and Wyoming. In the Western states, they occur in parts of Washington, Idaho, and California.

Theories of the origin of pimple mounds have generated an immense and diverse literature. Hypotheses for the genesis of pimple mounds along the Gulf Coast and in northeast Texas are:

1. Residual hillocks left after wind erosion, sheet flood erosion (possibly with a core of tress-root bonded surficial material), or fluvial erosion.
2. Accumulations of wind-transported sand, silt, or clay pellets or chips around clumps of vegetation.
3. Accumulations around or modifications of tree-tip mounds or cradle knolls.
4. Eolian accumulations whose sites were stated by or topographically enhanced by, erosional processes.
5. The results of "fluffing up", or the decreasing of the bulk densities, of solum materials and lateral or centripetal transport of surface materials by burrowing animals, such as pockets gophers, with possible eolian increments.

Hypothesis 4 and 5 involving eolian effects, seem the most plausible for the Gulf coast and northeast Texas mounds. Eolian accumulation suggests a partly non-pedogenic origin for the thickened A and E horizons and perhaps drier climates than at present.

## Holocene Alluvium

The term "Holocene" has been defined as covering the past 10.000 years. Locally, this is the time of flood plain sediment deposition along streams. These streams include the Sulfur River and its tributaries in the northern part of Cass County and on Big Cypress Bayou the boundary between Marion and Cass Counties.

All flood plain soils having minor profile development are vertisols and entisols. Most flood plain soils are considered to be frequently or occasionally flooded for brief to long durations. Examples of these soils are the Gladewater, Hannahatchie, Iulus, Manco, and Mantachie soils.

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# Glossary

**ABC soil.** A soil having an A, a B, and a C horizon.

**AC soil.** A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

**Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

**Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

**Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.

**Alpha,alpha-dipyridyl.** A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

**Animal unit month (AUM).** The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

**Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

**Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.

**Aspect.** The direction in which a slope faces.

**Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

| | |
|---|---|
| Very low | 0 to 3 |
| Low | 3 to 6 |
| Moderate | 6 to 9 |
| High | 9 to 12 |
| Very high | more than 12 |

**Back slope.** The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

**Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

**Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

**Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

**Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

**Bottomland.** The normal flood plain of a stream, subject to flooding.
**Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
**Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
**Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
**Canopy.** The leafy crown of trees or shrubs. (See Crown.)
**Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
**Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
**Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
**Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
**Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
**Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
**Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
**Clay depletions.** Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
**Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
**Claypan.** A slowly permeable soil horizon that contains much more clay than the horizons above. A claypan is commonly hard when dry and plastic or stiff when wet.
**Climax plant community.** The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
**Coarse textured soil.** Sand or loamy sand.
**Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
**Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
**Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
**Compressible** (in tables). Excessive decrease in volume of soft soil under load.
**Concretions.** Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

**Conservation cropping system.** Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue of the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

**Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

**Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

**Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

**Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Cropping system.** Growing crops according to a planned system of rotation and management practices.

**Crop residue management.** Returning crop residue of the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

**Cross-slope farming.** Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

**Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.

**Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

**Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.

**Delta.** A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Depth to rock** (in tables). Bedrock is too near the surface for the specified use.

**Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Drainage class** (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat*

*poorly drained, poorly drained*, and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

**Drainage, surface.** Runoff, or surface flow of water, from an area.

**Ecological site.** An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

**Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

**Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

**Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

**Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

*Erosion* (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

*Erosion* (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

**Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

**Fallow.** Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

**Fast intake** (in tables). The rapid movement of water into the soil.

**Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

**Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

**Fine textured soil.** Sandy clay, silty clay, or clay.

**First bottom.** The normal flood plain of a stream, subject to frequent or occasional flooding.

**Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

**Fluvial.** Of or pertaining to rivers; produced by river action, as a fluvial plain.

**Footslope.** The inclined surface at the base of a hill.

**Forb.** Any herbaceous plant not a grass or a sedge.

**Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

**Gilgai.** Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

**Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

**Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material.** Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

**Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground water.** Water filling all the unblocked pores of the material below the water table.

**Gully.** A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

**Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

**Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

**High-residue crops.** Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

**Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

*O horizon.*—An organic layer of fresh and decaying plant residue.

*A horizon.*—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon.*—The mineral horizon below an A, O, or E horizon. The B horizon is in part a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) red or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon.*—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*—Soft, consolidated bedrock beneath the soil.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

**Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Increasers.** Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

**Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

| | |
|---|---|
| Less than 0.2 | very low |
| 0.2 to 0.4 | low |
| 0.4 to 0.75 | moderately low |
| 0.75 to 1.25 | moderate |
| 1.25 to 1.75 | moderately high |
| 1.75 to 2.5 | high |
| More than 2.5 | very high |

**Intermittent stream.** A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

**Invaders.** On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

**Iron depletions.** Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

**Knoll.** A small, low, rounded hill rising above adjacent landforms.

**Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Leaching.** The removal of soluble material from soil or other material by percolating water.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Low-residue crops.** Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

**Low strength.** The soil is not strong enough to support loads.

**Masses.** Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

**Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.

**Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

**Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.

**Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.

**Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.

**Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.

**Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

**Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—f*aint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Mudstone.** Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

**Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

**Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

**Nodules.** Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

**Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

| | |
|---|---|
| Very low | less than 0.5 percent |
| Low | 0.5 to 1.0 percent |
| Moderately low | 1.0 to 2.0 percent |
| Moderate | 2.0 to 4.0 percent |
| High | 4.0 to 8.0 percent |
| Very high | more than 8.0 percent |

**Organoargillans.** Dark, organic stained clay films.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The downward movement of water through the soil.

**Percs slowly** (in tables). The slow movement of water through the soil adversely affects the specified use.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

| | |
|---|---|
| Very slow | less than 0.06 inch |
| Slow | 0.06 to 0.2 inch |
| Moderately slow | 0.2 to 0.6 inch |
| Moderate | 0.6 inch to 2.0 inches |
| Moderately rapid | 2.0 to 6.0 inches |
| Rapid | 6.0 to 20 inches |
| Very rapid | more than 20 inches |

**Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

**pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Pleistocene.** The epoch of the Quaternary Period of geologic time, following the Pliocene Epoch and preceding the Holocene (from about 2 million to 10 thousand years ago); also the corresponding (time-stratigraphic) “series” of earth materials.

**Plowpan.** A compacted layer formed in the soil directly below the plowed layer.

**Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

**Poor filter** (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

**Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Potential native plant community.** See Climax plant community.

**Potential rooting depth (effective rooting depth).** Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

**Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

**Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.

**Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.

**Proper grazing use.** Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

**Range condition.** The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

**Rangeland.** Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

| | |
|---|---|
| Ultra acid | less than 3.5 |
| Extremely acid | 3.5 to 4.4 |
| Very strongly acid | 4.5 to 5.0 |
| Strongly acid | 5.1 to 5.5 |
| Moderately acid | 5.6 to 6.0 |
| Slightly acid | 6.1 to 6.5 |
| Neutral | 6.6 to 7.3 |
| Slightly alkaline | 7.4 to 7.8 |
| Moderately alkaline | 7.9 to 8.4 |
| Strongly alkaline | 8.5 to 9.0 |
| Very strongly alkaline | 9.1 and higher |

**Redoximorphic concentrations.** Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

**Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

**Redoximorphic features.** Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

**Reduced matrix.** A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

**Relief.** The elevations or inequalities of a land surface, considered collectively.

**Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

**Rill.** A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

**Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

**Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff.

Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sandstone.** Sedimentary rock containing dominantly sand-sized particles.

**Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

**Second bottom.** The first terrace above the normal flood plain (or first bottom) of a river.

**Sedimentary rock.** Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

**Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

**Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

**Series, soil.** A group of soils that have profiles that are almost alike. All the soils of a given series have horizons that are similar in composition, thickness, and arrangement.

**Shale.** Sedimentary rock formed by induration of a clay, silty clay, or silty clay loam deposit and having the tendency to split into thin layers.

**Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

**Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Silica.** A combination of silicon and oxygen. The mineral form is called quartz.

**Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

**Siltstone.** Sedimentary rock made up of dominantly silt-sized particles.

**Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

**Slickensides.** Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

**Slippage** (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

**Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

| | |
|---|---|
| Nearly level | 0 to 1 percent |
| Very gently sloping | 1 to 3 percent |
| Gently sloping | 3 to 5 percent |
| Moderately sloping | 5 to 8 percent |
| Strongly sloping | 8 to 12 percent |
| Moderately steep | 12 to 20 percent |
| Steep | 20 to 45 percent |
| Very steep | 45 percent and higher |

**Slope** (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

**Slow intake** (in tables). The slow movement of water into the soil.

**Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

**Small stones** (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

**Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

**Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

| | |
|---|---|
| Very coarse sand | 2.0 to 1.0 |
| Coarse sand | 1.0 to 0.5 |
| Medium sand | 0.5 to 0.25 |
| Fine sand | 0.25 to 0.10 |
| Very fine sand | 0.10 to 0.05 |
| Silt | 0.05 to 0.002 |
| Clay | less than 0.002 |

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

**Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

**Terrace.** An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**Terrace** (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

**Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.

**Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

**Toe slope.** The outermost inclined surface at the base of a hill; part of a footslope.

**Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

**Toxicity** (in tables). Excessive amount of toxic substances, such as sodium or sulfur that severely hinder establishment of vegetation or severely restrict plant growth.

**Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

**Tuff.** A compacted deposit that is 50 percent or more volcanic ash and dust.

**Underlying material.** The part of the soil below the solum.

**Unstable fill** (in tables). Risk of caving or sloughing on banks of fill material.

**Upland.** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

**Variegation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

**Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

**Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**Wilting point (or permanent wilting point).** The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow.** The uprooting and tipping over of trees by the wind.

# Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Jefferson, Texas)

| Month | Temperature: Average daily maximum | Temperature: Average daily minimum | Temperature: Average | Temperature: 2 years in 10 will have-- Maximum temperature higher than-- | Temperature: 2 years in 10 will have-- Minimum temperature lower than-- | Temperature: Average number of growing degree days* | Precipitation: Average | Precipitation: 2 years in 10 will have-- Less than-- | Precipitation: 2 years in 10 will have-- More than-- | Precipitation: Average number of days with 0.10 inch or more |
|---|---|---|---|---|---|---|---|---|---|---|
| | °F | °F | °F | °F | °F | Units | In | In | In | |
| January----- | 56.4 | 32.9 | 44.6 | 78 | 14 | 52 | 4.14 | 2.20 | 5.98 | 6 |
| February---- | 61.7 | 36.7 | 49.2 | 83 | 16 | 99 | 3.98 | 1.81 | 6.20 | 5 |
| March------- | 68.6 | 43.5 | 56.1 | 86 | 22 | 238 | 4.34 | 2.33 | 6.17 | 6 |
| April------- | 75.7 | 49.4 | 62.6 | 89 | 31 | 383 | 4.02 | 1.83 | 5.84 | 5 |
| May--------- | 82.6 | 59.7 | 71.2 | 93 | 42 | 656 | 4.28 | 1.96 | 6.36 | 6 |
| June-------- | 88.8 | 67.3 | 78.1 | 98 | 51 | 839 | 5.10 | 1.98 | 8.09 | 6 |
| July-------- | 92.9 | 70.3 | 81.6 | 101 | 60 | 980 | 2.98 | 1.33 | 4.22 | 4 |
| August------ | 93.6 | 69.0 | 81.3 | 103 | 56 | 971 | 2.99 | 1.03 | 4.89 | 4 |
| September--- | 87.5 | 61.7 | 74.6 | 102 | 40 | 738 | 3.23 | 1.12 | 5.08 | 4 |
| October----- | 77.6 | 50.3 | 64.0 | 93 | 30 | 437 | 4.63 | 1.94 | 7.06 | 5 |
| November---- | 66.0 | 41.8 | 53.9 | 84 | 22 | 182 | 4.76 | 2.43 | 7.08 | 6 |
| December---- | 57.3 | 34.7 | 46.0 | 78 | 12 | 75 | 4.40 | 2.15 | 6.37 | 6 |
| Yearly: | | | | | | | | | | |
| Average--- | 75.7 | 51.5 | 63.6 | --- | --- | --- | --- | --- | --- | --- |
| Extreme--- | 108 | -5 | --- | 104 | 10 | --- | --- | --- | --- | --- |
| Total----- | --- | --- | --- | --- | --- | 5,648 | 48.86 | 34.19 | 57.09 | 63 |

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F.)

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Jefferson, Texas)

| Probability | Temperature | | |
|---|---|---|---|
| | 24°F or lower | 28°F or lower | 32°F or lower |
| Last freezing temperature in spring: | | | |
| 1 year in 10 later than-- | March 10 | March 31 | April 17 |
| 2 years in 10 later than-- | March 1 | March 23 | April 10 |
| 5 years in 10 later than-- | February 11 | March 9 | March 26 |
| First freezing temperature in fall: | | | |
| 1 year in 10 earlier than-- | November 7 | October 23 | October 18 |
| 2 years in 10 earlier than-- | November 16 | November 1 | October 24 |
| 5 years in 10 earlier than-- | December 4 | November 18 | November 5 |

Table 3.--Growing Season

(Recorded for the period 1971-2000 at Jefferson, Texas)

| Probability | Daily Minimum Temperature | | |
|---|---|---|---|
| | Number of days higher than 24°F | Number of days higher than 28°F | Number of days higher than 32°F |
| | Days | Days | Days |
| 9 years in 10 | 259 | 220 | 187 |
| 8 years in 10 | 273 | 232 | 200 |
| 5 years in 10 | 299 | 255 | 223 |
| 2 years in 10 | 325 | 278 | 246 |
| 1 year in 10 | 338 | 289 | 259 |

Table 4.--Acreage and Proportionate Extent of the Soils

| Map symbol | Soil name | Acres | Percent |
|---|---|---|---|
| AaB | Alazan fine sandy loam, 0 to 2 percent slopes | 1,866 | 0.2 |
| AsA | Ashford clay, 0 to 1 percent slopes, ponded | 1,337 | 0.2 |
| BaB | Bernaldo fine sandy loam, 1 to 3 percent slopes | 12,605 | 1.4 |
| BaD | Bernaldo fine sandy loam, 3 to 8 percent slopes | 876 | * |
| Bg | Bibb fine sandy loam, frequently flooded | 13,673 | 1.5 |
| BoC | Bowie fine sandy loam, 2 to 5 percent slopes | 126,692 | 14.3 |
| BrB | Briley loamy fine sand, 2 to 5 percent slopes | 20,262 | 2.3 |
| CrF | Cuthbert and Redsprings soils, 5 to 15 percent slopes | 7,074 | 0.8 |
| CrG | Cuthbert and Redsprings soils, 15 to 40 percent slopes, stony | 4,405 | 0.5 |
| CtE | Cuthbert fine sandy loam, 5 to 15 percent slopes | 69,925 | 7.9 |
| CuE | Cuthbert gravelly fine sandy loam, 5 to 15 percent slopes | 65,674 | 7.4 |
| Cy | Cypress clay loam, submerged | 5,952 | 0.7 |
| DaB | Darco loamy fine sand, 2 to 5 percent slopes | 23,673 | 2.7 |
| DaE | Darco loamy fine sand, 8 to 15 percent slopes | 8,821 | 1.0 |
| DAM | Dams | 176 | * |
| DuA | Duffern fine sand, 1 to 5 percent slopes | 4,889 | 0.6 |
| EeB | Eastwood very fine sandy loam, 1 to 5 percent slopes | 7,854 | 0.9 |
| EeD | Eastwood very fine sandy loam, 5 to 15 percent slopes | 9,708 | 1.1 |
| ElA | Elrose fine sandy loam, 2 to 5 percent slopes | 2,692 | 0.3 |
| EtA | Erno-Thage complex, 0 to 2 percent slopes | 2,942 | 0.3 |
| EyB | Eylau very fine sandy loam, 0 to 2 percent slopes | 967 | 0.1 |
| GaA | Gallime fine sandy loam, 1 to 5 percent slopes | 12,566 | 1.4 |
| GaC | Gallime-Guyton complex, 0 to 2 percent slopes | 20,118 | 2.3 |
| Gf | Gladewater clay, frequently flooded | 11,501 | 1.3 |
| HaA | Hainesville fine sand, 0 to 2 percent slopes | 5,515 | 0.6 |
| Hb | Hannahatchee fine sandy loam, occasionally flooded | 1,581 | 0.2 |
| Iu | Iulus fine sandy loam, frequently flooded | 23,093 | 2.6 |
| KiC | Kirvin gravelly fine sandy loam, 2 to 5 percent slopes | 32,324 | 3.7 |
| KiD | Kirvin soils, graded, 2 to 8 percent slopes | 5,806 | 0.7 |
| KrC | Kirvin very fine sandy loam, 2 to 5 percent slopes | 32,065 | 3.6 |
| KuA | Kullit very fine sandy loam, 0 to 2 percent slopes | 7,802 | 0.9 |
| LcB | Latch loamy fine sand, 0 to 2 percent slopes | 3,079 | 0.3 |
| LmB | Latch-Mollville complex, 0 to 2 percent slopes | 13,895 | 1.6 |
| LtB | Latex fine sandy loam, 1 to 3 percent slopes | 9,132 | 1.0 |
| LuC | Lilbert loamy fine sand, 2 to 5 percent slopes | 60,478 | 6.8 |
| Mf | Mantachie loam, frequently flooded | 18,245 | 2.1 |
| MiA | Metcalf silt loam, 0 to 2 percent slopes | 18,689 | 2.1 |
| MkA | Mollville-Kildare complex, 0 to 1 percent slopes | 561 | * |
| MlA | Mollville loam, 0 to 1 percent slopes | 7,376 | 0.8 |
| Mm | Mooreville-Mantachie complex, frequently flooded | 22,655 | 2.6 |
| RgC | Redsprings gravelly fine sandy loam, 2 to 5 percent slopes | 1,859 | 0.2 |
| RnB | Rentzel loamy fine sand, 0 to 3 percent slopes | 6,844 | 0.8 |
| SaC | Sacul very fine sandy loam, 1 to 5 percent slopes | 941 | 0.1 |
| SlC | Sailes fine sandy loam, 1 to 5 percent slopes | 20,705 | 2.3 |
| Sm | Sardis-Manco complex, frequently flooded | 12,927 | 1.5 |
| So | Socagee silty clay loam, frequently flooded | 6,434 | 0.7 |
| SPY | Spillway | 117 | * |
| TnB | Tenaha loamy fine sand, 1 to 5 percent slopes | 12,680 | 1.4 |
| TnD | Tenaha loamy fine sand, 5 to 15 percent slopes | 74,825 | 8.5 |
| Ud | Udorthents, gravelly | 2,017 | 0.2 |
| W | Water | 38,939 | 4.4 |
| WrA | Wrightsville silt loam, 0 to 1 percent slopes, ponded | 7,495 | 0.8 |
| | Total | 884,327 | 100.0 |

* Less than 0.1 percent.

Table 5.--Prime and Other Important Farmland

(Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland. If a soil is prime or important farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

| Map Symbol | Map unit name | Farmland Classification |
|---|---|---|
| AaB | Alazan fine sandy loam, 0 to 2 percent slopes | All areas are prime farmland |
| BaB | Bernaldo fine sandy loam, 1 to 3 percent slopes | All areas are prime farmland |
| BoC | Bowie fine sandy loam, 2 to 5 percent slopes | All areas are prime farmland |
| ElA | Elrose fine sandy loam, 2 to 5 percent slopes | All areas are prime farmland |
| EtA | Erno-Thage complex, 0 to 2 percent slopes | All areas are prime farmland |
| EyB | Eylau very fine sandy loam, 0 to 2 percent slopes | All areas are prime farmland |
| GaA | Gallime fine sandy loam, 1 to 5 percent slopes | All areas are prime farmland |
| GaC | Gallime-Guyton complex, 0 to 2 percent slopes | Prime farmland if drained |
| Hb | Hannahatchee fine sandy loam, occasionally flooded | All areas are prime farmland |
| KuA | Kullit very fine sandy loam, 0 to 2 percent slopes | All areas are prime farmland |
| LtB | Latex fine sandy loam, 1 to 3 percent slopes | All areas are prime farmland |
| MiA | Metcalf silt loam, 0 to 2 percent slopes | All areas are prime farmland |
| MkA | Mollville-Kildare complex, 0 to 1 percent slopes | All areas are prime farmland |
| RgC | Redsprings gravelly fine sandy loam, 2 to 5 percent slopes | All areas are prime farmland |
| SlC | Sailes fine sandy loam, 1 to 5 percent slopes | All areas are prime farmland |

Table 6.--Non-Irrigated Yields by Map Unit Component

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

| Map symbol and soil name | Land capability | Bahiagrass | Common bermudagrass | Improved bermudagrass | Small grains grazeout | Watermelons |
|---|---|---|---|---|---|---|
| | | AUM | AUM | AUM | AUM | Tons |
| AaB: | | | | | | |
| Alazan | 2w | 6.00 | 5.00 | 7.00 | 5.00 | --- |
| AsA: | | | | | | |
| Ashford | 4w | 7.00 | --- | --- | --- | --- |
| BaB: | | | | | | |
| Bernaldo | 2e | 8.00 | 7.00 | 10.00 | 6.00 | 11.00 |
| BaD: | | | | | | |
| Bernaldo | 4e | 7.00 | --- | 9.00 | --- | --- |
| Bg: | | | | | | |
| Bibb | 5w | --- | --- | --- | --- | --- |
| BoC: | | | | | | |
| Bowie | 3e | 6.00 | 5.00 | 7.00 | 5.00 | 11.00 |
| BrB: | | | | | | |
| Briley | 3e | --- | --- | 9.00 | --- | 12.00 |
| CrF: | | | | | | |
| Cuthbert | 6e | 2.00 | 2.00 | 3.00 | --- | --- |
| Redsprings | 6e | 2.00 | 2.00 | 3.00 | --- | --- |
| CrG: | | | | | | |
| Cuthbert | 7e | --- | --- | --- | --- | --- |
| Redsprings | 7e | --- | --- | --- | --- | --- |
| CtE: | | | | | | |
| Cuthbert | 6e | 2.00 | 2.00 | 3.00 | --- | --- |
| CuE: | | | | | | |
| Cuthbert | 6e | 2.00 | 1.00 | 2.00 | --- | --- |
| Cy: | | | | | | |
| Cypress | 8w | --- | --- | --- | --- | --- |
| DaB: | | | | | | |
| Darco | 3s | --- | --- | 3.00 | 3.00 | 11.00 |
| DaE: | | | | | | |
| Darco | 6e | --- | --- | 2.00 | --- | --- |
| DuA: | | | | | | |
| Duffern | 4s | --- | --- | 5.00 | --- | 8.00 |
| EeB: | | | | | | |
| Eastwood | 4e | 6.00 | 6.00 | 7.50 | --- | --- |
| EeD: | | | | | | |
| Eastwood | 6e | 5.50 | 5.50 | 6.50 | --- | --- |
| ElA: | | | | | | |
| Elrose | 3e | 6.00 | 6.00 | 8.00 | 6.00 | 8.00 |

Table 6.--Non-Irrigated Yields by Map Unit Component--Continued

| Map symbol and soil name | Land capability | Bahiagrass | Common bermudagrass | Improved bermudagrass | Small grains grazeout | Watermelons |
|---|---|---|---|---|---|---|
| | | AUM | AUM | AUM | AUM | Tons |
| EtA: | | | | | | |
| Erno | 2e | 9.00 | 8.00 | 10.00 | --- | 12.00 |
| Thage | 2w | 6.00 | 6.00 | --- | --- | --- |
| EyB: | | | | | | |
| Eylau | 2e | 8.00 | 8.00 | 10.00 | --- | --- |
| GaA: | | | | | | |
| Gallime | 3e | 7.00 | 6.00 | 8.00 | 4.00 | 10.00 |
| GaC: | | | | | | |
| Gallime | 2e | 8.00 | 7.00 | 9.00 | 4.00 | 11.00 |
| Guyton | 3w | 6.50 | 5.00 | --- | --- | --- |
| Gf: | | | | | | |
| Gladewater | 5w | --- | 2.00 | 2.00 | --- | --- |
| HaA: | | | | | | |
| Hainesville | 3s | --- | --- | 7.50 | 4.00 | --- |
| Hb: | | | | | | |
| Hannahatchee | 2w | --- | --- | 6.00 | 5.00 | --- |
| Iu: | | | | | | |
| Iulus | 5w | 7.00 | 6.00 | 8.00 | --- | --- |
| KiC: | | | | | | |
| Kirvin | 3e | 3.00 | 2.00 | 4.00 | 3.00 | --- |
| KiD: | | | | | | |
| Kirvin | 4e | 4.00 | 3.00 | 5.00 | 4.00 | --- |
| KrC: | | | | | | |
| Kirvin | 3e | 3.00 | 2.00 | 4.00 | 3.00 | --- |
| KuA: | | | | | | |
| Kullit | 2e | --- | --- | 9.00 | --- | --- |
| LcB: | | | | | | |
| Latch | 3s | 6.00 | --- | 7.00 | --- | 11.00 |
| LmB: | | | | | | |
| Latch | 3s | 6.00 | --- | 7.00 | --- | 11.00 |
| Mollville | 4w | 4.00 | 4.00 | --- | --- | --- |
| LtB: | | | | | | |
| Latex | 2e | 8.00 | 7.00 | 10.00 | 6.00 | 11.00 |
| LuC: | | | | | | |
| Lilbert | 3e | 3.00 | --- | 4.00 | 3.00 | 10.00 |
| Mf: | | | | | | |
| Mantachie | 5w | 8.00 | --- | --- | --- | --- |
| MiA: | | | | | | |
| Metcalf | 2w | 7.00 | 5.00 | 11.00 | --- | --- |
| MkA: | | | | | | |
| Mollville | 4w | 4.00 | 4.00 | --- | --- | --- |
| Kildare | 2w | 6.00 | 6.00 | --- | --- | --- |

Table 6.--Non-Irrigated Yields by Map Unit Component--Continued

| Map symbol and soil name | Land capability | Bahiagrass | Common bermudagrass | Improved bermudagrass | Small grains grazeout | Watermelons |
|---|---|---|---|---|---|---|
| | | AUM | AUM | AUM | AUM | Tons |
| MlA: | | | | | | |
| Mollville | 4w | 4.00 | 4.00 | --- | --- | --- |
| Mm: | | | | | | |
| Mooreville | 5w | 8.00 | --- | --- | --- | --- |
| Mantachie | 5w | 8.00 | --- | --- | --- | --- |
| RgC: | | | | | | |
| Redsprings | 3e | 4.00 | 3.00 | 5.00 | 3.00 | --- |
| RnB: | | | | | | |
| Rentzel | 3w | 4.00 | 3.00 | 4.00 | 3.00 | --- |
| SaC: | | | | | | |
| Sacul | 4e | 7.50 | 6.50 | 7.50 | --- | --- |
| SlC: | | | | | | |
| Sailes | 3e | 8.50 | 6.00 | 9.00 | --- | --- |
| Sm: | | | | | | |
| Sardis | 4w | 6.00 | 6.00 | 8.00 | --- | --- |
| Manco | 5w | 2.00 | 2.00 | --- | --- | --- |
| So: | | | | | | |
| Socagee | 5w | 6.00 | 5.00 | --- | --- | --- |
| TnB: | | | | | | |
| Tenaha | 3s | 2.00 | 2.00 | 3.00 | 3.00 | 12.00 |
| TnD: | | | | | | |
| Tenaha | 6e | 2.00 | 2.00 | 3.00 | --- | --- |
| Ud: | | | | | | |
| Udorthents, gravelly | 6e | --- | --- | 4.00 | --- | --- |
| WrA: | | | | | | |
| Wrightsville | 4w | 7.50 | 7.00 | --- | --- | --- |

Table 7.--Woodland Productivity

| Map symbol and soil name | Potential productivity: Common trees | Site index | Volume of wood fiber | Trees to manage |
|---|---|---|---|---|
| | | | cu ft/ac | |
| AaB: | | | | |
| Alazan | loblolly pine | 95 | 143 | loblolly pine, slash pine, sweetgum |
| | shortleaf pine | --- | 0 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| AsA: | | | | |
| Ashford | green ash | --- | 0 | green ash, green ash |
| | post oak | --- | 0 | |
| | southern red oak | --- | 0 | |
| | water oak | 70 | 57 | |
| | willow oak | --- | 0 | |
| BaB: | | | | |
| Bernaldo | loblolly pine | 94 | 143 | loblolly pine, sweetgum |
| | shortleaf pine | 84 | 143 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| BaD: | | | | |
| Bernaldo | loblolly pine | 84 | 143 | loblolly pine, sweetgum |
| | shortleaf pine | --- | 0 | |
| | southern red oak | 94 | 143 | |
| | sweetgum | --- | 0 | |
| Bg: | | | | |
| Bibb | Atlantic white cedar | --- | 0 | eastern cottonwood, loblolly pine, sweetgum, tuliptree |
| | blackgum | --- | 0 | |
| | loblolly pine | 100 | 157 | |
| | sweetgum | 90 | 100 | |
| | tuliptree | --- | 0 | |
| | water oak | 90 | 86 | |
| BoC: | | | | |
| Bowie | loblolly pine | 86 | 129 | loblolly pine |
| | shortleaf pine | 80 | 129 | |
| BrB: | | | | |
| Briley | loblolly pine | 80 | 114 | loblolly pine, slash pine |
| | shortleaf pine | 70 | 114 | |
| | slash pine | --- | 0 | |
| CrF: | | | | |
| Cuthbert | loblolly pine | 84 | 114 | loblolly pine |
| | shortleaf pine | 72 | 114 | |
| Redsprings | loblolly pine | 79 | 114 | loblolly pine |
| | shortleaf pine | 69 | 114 | |
| CrG: | | | | |
| Cuthbert | loblolly pine | 80 | 114 | loblolly pine |
| | shortleaf pine | 75 | 114 | |
| Redsprings | loblolly pine | 79 | 114 | loblolly pine |
| | shortleaf pine | 69 | 114 | |

Table 7.--Woodland Productivity--Continued

| Map symbol and soil name | Potential productivity: Common trees | Site index | Volume of wood fiber | Trees to manage |
|---|---|---|---|---|
| | | | cu ft/ac | |
| CtE: | | | | |
| Cuthbert | loblolly pine | 84 | 114 | loblolly pine |
| | shortleaf pine | 72 | 114 | |
| CuE: | | | | |
| Cuthbert | loblolly pine | 84 | 114 | loblolly pine |
| | shortleaf pine | 72 | 114 | |
| Cy: | | | | |
| Cypress | baldcypress | 78 | 43 | baldcypress |
| DaB: | | | | |
| Darco | loblolly pine | 81 | 114 | loblolly pine, shortleaf pine |
| | shortleaf pine | 76 | 114 | |
| DaE: | | | | |
| Darco | loblolly pine | 81 | 114 | loblolly pine, shortleaf pine |
| | shortleaf pine | 76 | 114 | |
| DuA: | | | | |
| Duffern | loblolly pine | 75 | 100 | loblolly pine, slash pine |
| | shortleaf pine | 65 | 100 | |
| EeB: | | | | |
| Eastwood | hickory | --- | 0 | loblolly pine |
| | loblolly pine | 93 | 143 | |
| | shortleaf pine | --- | 0 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| EeD: | | | | |
| Eastwood | hickory | --- | 0 | loblolly pine |
| | loblolly pine | 86 | 129 | |
| | shortleaf pine | 77 | 129 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| ElA: | | | | |
| Elrose | loblolly pine | 92 | 143 | loblolly pine, shortleaf pine |
| | shortleaf pine | 85 | 143 | |
| | southern red oak | --- | 0 | |
| | sweetgum | 90 | 100 | |
| EtA: | | | | |
| Erno | loblolly pine | 100 | 157 | loblolly pine |
| | shortleaf pine | 90 | 143 | |
| | southern red oak | 90 | 72 | |
| | sweetgum | 100 | 143 | |
| Thage | loblolly pine | 90 | 129 | loblolly pine, sweetgum, water oak |
| | shortleaf pine | 85 | 143 | |
| | sweetgum | 90 | 100 | |
| | water oak | 90 | 86 | |

Table 7.--Woodland Productivity--Continued

| Map symbol and soil name | Common trees | Site index | Volume of wood fiber | Trees to manage |
|---|---|---|---|---|
| | | | cu ft/ac | |
| EyB: | | | | |
| Eylau | loblolly pine | 73 | 100 | loblolly pine, slash pine |
| | shortleaf pine | 71 | 114 | |
| | slash pine | 77 | 143 | |
| | southern red oak | --- | 0 | |
| GaA: | | | | |
| Gallime | loblolly pine | 90 | 129 | loblolly pine, sweetgum |
| | shortleaf pine | 80 | 129 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| GaC: | | | | |
| Gallime | loblolly pine | 90 | 129 | loblolly pine, sweetgum |
| | shortleaf pine | 80 | 129 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| Guyton | cherrybark oak | --- | 0 | green ash, loblolly pine, slash pine, water oak |
| | green ash | --- | 0 | |
| | loblolly pine | 85 | 114 | |
| | slash pine | 90 | 157 | |
| | sweetgum | --- | 0 | |
| | water oak | --- | 0 | |
| | willow oak | 78 | 72 | |
| Gf: | | | | |
| Gladewater | water oak | 85 | 86 | water oak |
| | willow oak | 85 | 86 | |
| HaA: | | | | |
| Hainesville | loblolly pine | 96 | 143 | loblolly pine, shortleaf pine |
| | shortleaf pine | 88 | 143 | |
| Hb: | | | | |
| Hannahatchee | cherrybark oak | --- | 0 | American sycamore, black walnut, loblolly pine, sweetgum |
| | loblolly pine | 102 | 157 | |
| | sweetgum | 100 | 143 | |
| Iu: | | | | |
| Iulus | sweetgum | 100 | 143 | loblolly pine, sweetgum |
| | water oak | 100 | 100 | |
| KiC: | | | | |
| Kirvin | loblolly pine | 85 | 114 | loblolly pine, slash pine |
| | shortleaf pine | 75 | 114 | |
| KiD: | | | | |
| Kirvin | loblolly pine | 85 | 114 | loblolly pine, slash pine |
| | shortleaf pine | 75 | 114 | |
| KrC: | | | | |
| Kirvin | loblolly pine | 83 | 114 | loblolly pine |
| | shortleaf pine | 72 | 114 | |

Table 7.--Woodland Productivity--Continued

| Map symbol and soil name | Potential productivity: Common trees | Site index | Volume of wood fiber | Trees to manage |
|---|---|---|---|---|
| | | | cu ft/ac | |
| KuA: | | | | |
| Kullit | loblolly pine | 90 | 129 | cherrybark oak, loblolly pine, sweetgum |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| | white oak | --- | 0 | |
| LcB: | | | | |
| Latch | loblolly pine | 98 | 143 | loblolly pine, southern red oak, water oak |
| | post oak | --- | 0 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| | water oak | --- | 0 | |
| | willow oak | --- | 0 | |
| | winged elm | --- | 0 | |
| LmB: | | | | |
| Latch | loblolly pine | 98 | 143 | loblolly pine, southern red oak, water oak |
| | post oak | --- | 0 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| | water oak | --- | 0 | |
| | willow oak | --- | 0 | |
| | winged elm | --- | 0 | |
| Mollville | loblolly pine | 82 | 114 | loblolly pine, sweetgum, water oak |
| | sweetgum | 80 | 86 | |
| | water oak | 80 | 72 | |
| | willow oak | 80 | 72 | |
| LtB: | | | | |
| Latex | hickory | --- | 0 | loblolly pine |
| | loblolly pine | 91 | 129 | |
| | shortleaf pine | 86 | 143 | |
| | slash pine | 100 | 186 | |
| | southern red oak | 95 | 72 | |
| | sweetgum | 95 | 114 | |
| LuC: | | | | |
| Lilbert | loblolly pine | 88 | 129 | loblolly pine, slash pine |
| | longleaf pine | 70 | 86 | |
| | shortleaf pine | 74 | 114 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| Mf: | | | | |
| Mantachie | cherrybark oak | 100 | 143 | cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, tuliptree |
| | eastern cottonwood | 90 | 100 | |
| | green ash | 80 | 57 | |
| | loblolly pine | 98 | 143 | |
| | sweetgum | 95 | 114 | |
| MiA: | | | | |
| Metcalf | loblolly pine | 92 | 143 | cherrybark oak, loblolly pine, shortleaf pine, Shumard's oak |
| | shortleaf pine | 74 | 114 | |
| | southern red oak | --- | 0 | |
| | sweetgum | --- | 0 | |
| | white oak | --- | 0 | |

Table 7.--Woodland Productivity--Continued

| Map symbol and soil name | Potential productivity: Common trees | Site index | Volume of wood fiber | Trees to manage |
|---|---|---|---|---|
| | | | cu ft/ac | |
| MkA: | | | | |
| Mollville | loblolly pine | 82 | 114 | loblolly pine, sweetgum, water oak |
| | sweetgum | 80 | 86 | |
| | water oak | 80 | 72 | |
| | willow oak | 80 | 72 | |
| Kildare | loblolly pine | 70 | 114 | loblolly pine, sweetgum, water oak |
| | shortleaf pine | 65 | 114 | |
| | sweetgum | 70 | 57 | |
| | water oak | 70 | 57 | |
| MlA: | | | | |
| Mollville | loblolly pine | 82 | 114 | loblolly pine, sweetgum, water oak |
| | sweetgum | 80 | 86 | |
| | water oak | 80 | 72 | |
| | willow oak | 80 | 72 | |
| Mm: | | | | |
| Mooreville | cherrybark oak | 100 | 143 | cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, tulip tree |
| | eastern cottonwood | 105 | 143 | |
| | green ash | 80 | 57 | |
| | loblolly pine | 95 | 143 | |
| | sweetgum | 100 | 143 | |
| Mantachie | cherrybark oak | 100 | 143 | cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, tulip tree |
| | eastern cottonwood | 90 | 100 | |
| | green ash | 80 | 57 | |
| | loblolly pine | 98 | 143 | |
| | sweetgum | 95 | 114 | |
| RgC: | | | | |
| Redsprings | loblolly pine | 79 | 114 | loblolly pine |
| | shortleaf pine | 69 | 114 | |
| RnB: | | | | |
| Rentzel | loblolly pine | 89 | 129 | loblolly pine |
| | shortleaf pine | 76 | 114 | |
| | sweetgum | --- | 0 | |
| SaC: | | | | |
| Sacul | loblolly pine | 85 | 129 | loblolly pine, shortleaf pine |
| | shortleaf pine | 80 | 129 | |
| SlC: | | | | |
| Sailes | loblolly pine | 95 | 143 | loblolly pine |
| | longleaf pine | 90 | 129 | |
| | shortleaf pine | 85 | 143 | |
| Sm: | | | | |
| Sardis | --- | --- | --- | --- |
| Manco | sweetgum | 92 | 114 | cherrybark oak, green ash |
| | water oak | 90 | 86 | |
| | willow oak | 90 | 86 | |

Table 7.--Woodland Productivity--Continued

| Map symbol and soil name | Potential productivity: Common trees | Site index | Volume of wood fiber | Trees to manage |
|---|---|---|---|---|
| | | | cu ft/ac | |
| So: | | | | |
| Socagee | overcup oak | 84 | 0 | --- |
| | sweetgum | 90 | 100 | |
| | water oak | 82 | 72 | |
| | willow oak | 82 | 72 | |
| TnB: | | | | |
| Tenaha | loblolly pine | 87 | 129 | loblolly pine |
| | shortleaf pine | 77 | 129 | |
| TnD: | | | | |
| Tenaha | loblolly pine | 87 | 129 | loblolly pine |
| | shortleaf pine | 77 | 129 | |
| Ud: | | | | |
| Udorthents, gravelly | --- | --- | --- | --- |
| WrA: | | | | |
| Wrightsville | sweetgum | 70 | 57 | loblolly pine, shortleaf pine, sweetgum, water oak, willow oak |
| | water oak | 70 | 57 | |

Table 8.--Haul Roads, Log Landings, and Soil Rutting on Woodland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Limitations affecting construction of haul roads and log landings | | Suitability for log landings | | Soil rutting hazard | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| AsA: | | | | | | | |
| Ashford | 90 | Moderate | | Poorly suited | | Severe | |
| | | Stickiness/slope | 0.50 | Ponding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Wetness | 1.00 | | |
| | | | | Stickiness; high plasticity index | 0.50 | | |
| | | | | Low strength | 0.50 | | |
| BaB: | | | | | | | |
| Bernaldo | 80 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| BaD: | | | | | | | |
| Bernaldo | 90 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| Bg: | | | | | | | |
| Bibb | 80 | Severe | | Poorly suited | | Moderate | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 0.50 |
| | | | | Wetness | 1.00 | | |
| BoC: | | | | | | | |
| Bowie | 80 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| BrB: | | | | | | | |
| Briley | 85 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| CrF: | | | | | | | |
| Cuthbert | 50 | Slight | | Moderately suited | | Moderate | |
| | | | | Slope | 0.50 | Low strength | 0.50 |
| Redsprings | 35 | Slight | | Moderately suited | | Moderate | |
| | | | | Slope | 0.50 | Low strength | 0.50 |
| CrG: | | | | | | | |
| Cuthbert | 60 | Moderate | | Poorly suited | | Moderate | |
| | | Slope | 0.50 | Slope | 1.00 | Low strength | 0.50 |
| Redsprings | 25 | Moderate | | Poorly suited | | Moderate | |
| | | Slope | 0.50 | Slope | 1.00 | Low strength | 0.50 |
| CtE: | | | | | | | |
| Cuthbert | 80 | Slight | | Moderately suited | | Moderate | |
| | | | | Slope | 0.50 | Low strength | 0.50 |

Table 8.--Haul Roads, Log Landings, and Soil Rutting on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Limitations affecting construction of haul roads and log landings | | Suitability for log landings | | Soil rutting hazard | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CuE: | | | | | | | |
| Cuthbert------------ | 80 | Slight | | Moderately suited | | Moderate | |
| | | | | Slope | 0.50 | Low strength | 0.50 |
| Cy: | | | | | | | |
| Cypress------------- | 90 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Ponding | 1.00 | Low strength | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 | Wetness | 0.50 |
| | | Low strength | 0.50 | Wetness | 1.00 | | |
| | | | | Low strength | 0.50 | | |
| DaB: | | | | | | | |
| Darco--------------- | 80 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| DaE: | | | | | | | |
| Darco--------------- | 80 | Slight | | Moderately suited | | Moderate | |
| | | | | Slope | 0.50 | Low strength | 0.50 |
| DuA: | | | | | | | |
| Duffern------------- | 80 | Moderate | | Moderately suited | | Moderate | |
| | | Sandiness | 0.50 | Sandiness | 0.50 | Low strength | 0.50 |
| EeB: | | | | | | | |
| Eastwood------------ | 90 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| EeD: | | | | | | | |
| Eastwood------------ | 90 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Slope | 0.50 | Low strength | 1.00 |
| | | | | Low strength | 0.50 | | |
| ElA: | | | | | | | |
| Elrose-------------- | 85 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| EtA: | | | | | | | |
| Erno---------------- | 50 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| Thage--------------- | 35 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| EyB: | | | | | | | |
| Eylau--------------- | 80 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| GaA: | | | | | | | |
| Gallime------------- | 75 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |

Table 8.--Haul Roads, Log Landings, and Soil Rutting on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Limitations affecting construction of haul roads and log landings | | Suitability for log landings | | Soil rutting hazard | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| GaC: | | | | | | | |
| Gallime---------- | 48 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| Guyton---------- | 42 | Moderate | | Poorly suited | | Severe | |
| | | Low strength | 0.50 | Wetness | 1.00 | Low strength | 1.00 |
| | | | | Low strength | 0.50 | | |
| Gf: | | | | | | | |
| Gladewater---------- | 90 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| | | Stickiness/slope | 0.50 | Stickiness; high plasticity index | 0.50 | | |
| HaA: | | | | | | | |
| Hainesville---------- | 90 | Moderate | | Moderately suited | | Moderate | |
| | | Sandiness | 0.50 | Sandiness | 0.50 | Low strength | 0.50 |
| Hb: | | | | | | | |
| Hannahatchee---------- | 95 | Moderate | | Moderately suited | | Moderate | |
| | | Flooding | 0.50 | Flooding | 0.50 | Low strength | 0.50 |
| Iu: | | | | | | | |
| Iulus---------- | 80 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| KiC: | | | | | | | |
| Kirvin---------- | 80 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| KiD: | | | | | | | |
| Kirvin---------- | 95 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| | | | | Stickiness; high plasticity index | 0.50 | | |
| KrC: | | | | | | | |
| Kirvin---------- | 80 | Moderate | | Well suited | | Moderate | |
| | | Low strength | 0.50 | | | Low strength | 0.50 |
| KuA: | | | | | | | |
| Kullit---------- | 85 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| LcB: | | | | | | | |
| Latch---------- | 90 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |

Table 8.--Haul Roads, Log Landings, and Soil Rutting on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Limitations affecting construction of haul roads and log landings: Rating class and limiting features | Value | Suitability for log landings: Rating class and limiting features | Value | Soil rutting hazard: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| LmB: | | | | | | | |
| Latch | 60 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| Mollville | 40 | Moderate | | Poorly suited | | Severe | |
| | | Low strength | 0.50 | Ponding | 1.00 | Low strength | 1.00 |
| | | | | Wetness | 1.00 | | |
| | | | | Low strength | 0.50 | | |
| LtB: | | | | | | | |
| Latex | 80 | Moderate | | Well suited | | Moderate | |
| | | Stickiness/slope | 0.50 | | | Low strength | 0.50 |
| LuC: | | | | | | | |
| Lilbert | 80 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| Mf: | | | | | | | |
| Mantachie | 80 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| | | | | Wetness | 0.50 | | |
| MiA: | | | | | | | |
| Metcalf | 80 | Moderate | | Moderately suited | | Severe | |
| | | Low strength | 0.50 | Low strength | 0.50 | Low strength | 1.00 |
| MkA: | | | | | | | |
| Mollville | 80 | Moderate | | Poorly suited | | Severe | |
| | | Low strength | 0.50 | Ponding | 1.00 | Low strength | 1.00 |
| | | | | Wetness | 1.00 | | |
| | | | | Low strength | 0.50 | | |
| Kildare | 15 | Moderate | | Poorly suited | | Severe | |
| | | Low strength | 0.50 | Ponding | 1.00 | Low strength | 1.00 |
| | | | | Wetness | 1.00 | | |
| | | | | Low strength | 0.50 | | |
| MlA: | | | | | | | |
| Mollville | 90 | Moderate | | Poorly suited | | Severe | |
| | | Low strength | 0.50 | Ponding | 1.00 | Low strength | 1.00 |
| | | | | Wetness | 1.00 | | |
| | | | | Low strength | 0.50 | | |
| Mm: | | | | | | | |
| Mooreville | 50 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| Mantachie | 35 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| | | | | Wetness | 0.50 | | |
| RgC: | | | | | | | |
| Redsprings | 80 | Moderate | | Well suited | | Moderate | |
| | | Low strength | 0.50 | | | Low strength | 0.50 |

Table 8.--Haul Roads, Log Landings, and Soil Rutting on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Limitations affecting construction of haul roads and log landings: Rating class and limiting features | Value | Suitability for log landings: Rating class and limiting features | Value | Soil rutting hazard: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| RnB: | | | | | | | |
| Rentzel | 80 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| SaC: | | | | | | | |
| Sacul | 85 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| SlC: | | | | | | | |
| Sailes | 85 | Moderate | | Well suited | | Moderate | |
| | | Low strength | 0.50 | | | Low strength | 0.50 |
| Sm: | | | | | | | |
| Sardis | 60 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| Manco | 40 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Low strength | 0.50 | | |
| | | | | Wetness | 0.50 | | |
| So: | | | | | | | |
| Socagee | 80 | Severe | | Poorly suited | | Severe | |
| | | Flooding | 1.00 | Flooding | 1.00 | Low strength | 1.00 |
| | | Low strength | 0.50 | Wetness | 1.00 | | |
| | | | | Low strength | 0.50 | | |
| TnB: | | | | | | | |
| Tenaha | 80 | Slight | | Well suited | | Moderate | |
| | | | | | | Low strength | 0.50 |
| TnD: | | | | | | | |
| Tenaha | 80 | Slight | | Moderately suited | | Moderate | |
| | | | | Slope | 0.50 | Low strength | 0.50 |
| Ud: | | | | | | | |
| Udorthents, Gravelly | 85 | Slight | | Moderately suited | | Moderate | |
| | | | | Stickiness; high plasticity index | 0.50 | Low strength | 0.50 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Moderate | | Poorly suited | | Severe | |
| | | Low strength | 0.50 | Ponding | 1.00 | Low strength | 1.00 |
| | | | | Wetness | 0.50 | | |
| | | | | Low strength | 0.50 | | |

Table 9.--Hazard of Erosion and Suitability for Roads on Woodland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Hazard of off-road or off-trail erosion | | Hazard of erosion on roads and trails | | Suitability for roads (natural surface) | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Slight | | Slight | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| AsA: | | | | | | | |
| Ashford | 90 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| | | | | | | Low strength | 0.50 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Slight | | Slight | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| BaD: | | | | | | | |
| Bernaldo | 90 | Slight | | Moderate | | Moderately suited | |
| | | | | Slope/erodibility | 0.50 | Low strength | 0.50 |
| Bg: | | | | | | | |
| Bibb | 80 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Wetness | 1.00 |
| BoC: | | | | | | | |
| Bowie | 80 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| BrB: | | | | | | | |
| Briley | 85 | Slight | | Slight | | Well suited | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Slight | | Severe | | Moderately suited | |
| | | | | Slope/erodibility | 0.95 | Slope | 0.50 |
| Redsprings | 35 | Slight | | Severe | | Moderately suited | |
| | | | | Slope/erodibility | 0.95 | Slope | 0.50 |
| CrG: | | | | | | | |
| Cuthbert | 60 | Moderate | | Severe | | Poorly suited | |
| | | Slope/erodibility | 0.50 | Slope/erodibility | 0.95 | Slope | 1.00 |
| Redsprings | 25 | Moderate | | Severe | | Poorly suited | |
| | | Slope/erodibility | 0.50 | Slope/erodibility | 0.95 | Slope | 1.00 |
| CtE: | | | | | | | |
| Cuthbert | 80 | Slight | | Severe | | Moderately suited | |
| | | | | Slope/erodibility | 0.95 | Slope | 0.50 |

Table 9.--Hazard of Erosion and Suitability for Roads on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Hazard of off-road or off-trail erosion: Rating class and limiting features | Value | Hazard of erosion on roads and trails: Rating class and limiting features | Value | Suitability for roads (natural surface): Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| CuE: | | | | | | | |
| Cuthbert | 80 | Slight | | Moderate | | Moderately suited | |
| | | | | Slope/erodibility | 0.50 | Slope | 0.50 |
| Cy: | | | | | | | |
| Cypress | 90 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Flooding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |
| DaB: | | | | | | | |
| Darco | 80 | Slight | | Slight | | Well suited | |
| DaE: | | | | | | | |
| Darco | 80 | Slight | | Moderate | | Moderately suited | |
| | | | | Slope/erodibility | 0.50 | Slope | 0.50 |
| DuA: | | | | | | | |
| Duffern | 80 | Slight | | Slight | | Moderately suited | |
| | | | | | | Sandiness | 0.50 |
| EeB: | | | | | | | |
| Eastwood | 90 | Slight | | Moderate | | Moderately suited | |
| | | | | Slope/erodibility | 0.50 | Low strength | 0.50 |
| EeD: | | | | | | | |
| Eastwood | 90 | Moderate | | Severe | | Moderately suited | |
| | | Slope/erodibility | 0.50 | Slope/erodibility | 0.95 | Slope | 0.50 |
| | | | | | | Low strength | 0.50 |
| ElA: | | | | | | | |
| Elrose | 85 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| EtA: | | | | | | | |
| Erno | 50 | Slight | | Slight | | Well suited | |
| Thage | 35 | Slight | | Slight | | Well suited | |
| EyB: | | | | | | | |
| Eylau | 80 | Slight | | Slight | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| GaA: | | | | | | | |
| Gallime | 75 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| GaC: | | | | | | | |
| Gallime | 48 | Slight | | Slight | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| Guyton | 42 | Slight | | Slight | | Poorly suited | |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |

Table 9.--Hazard of Erosion and Suitability for Roads on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Hazard of off-road or off-trail erosion: Rating class and limiting features | Value | Hazard of erosion on roads and trails: Rating class and limiting features | Value | Suitability for roads (natural surface): Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| Gf: | | | | | | | |
| Gladewater | 90 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| HaA: | | | | | | | |
| Hainesville | 90 | Slight | | Slight | | Moderately suited | |
| | | | | | | Sandiness | 0.50 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Slight | | Slight | | Moderately suited | |
| | | | | | | Flooding | 0.50 |
| Iu: | | | | | | | |
| Iulus | 80 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| KiC: | | | | | | | |
| Kirvin | 80 | Slight | | Slight | | Well suited | |
| KiD: | | | | | | | |
| Kirvin | 95 | Slight | | Moderate | | Moderately suited | |
| | | | | Slope/erodibility | 0.50 | Low strength | 0.50 |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| KrC: | | | | | | | |
| Kirvin | 80 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| KuA: | | | | | | | |
| Kullit | 85 | Slight | | Slight | | Well suited | |
| LcB: | | | | | | | |
| Latch | 90 | Slight | | Slight | | Well suited | |
| LmB: | | | | | | | |
| Latch | 60 | Slight | | Slight | | Well suited | |
| Mollville | 40 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |
| LtB: | | | | | | | |
| Latex | 80 | Slight | | Slight | | Well suited | |
| LuC: | | | | | | | |
| Lilbert | 80 | Slight | | Slight | | Well suited | |

Table 9.--Hazard of Erosion and Suitability for Roads on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Hazard of off-road or off-trail erosion: Rating class and limiting features | Value | Hazard of erosion on roads and trails: Rating class and limiting features | Value | Suitability for roads (natural surface): Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| Mf: | | | | | | | |
| Mantachie | 80 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| | | | | | | Wetness | 0.50 |
| MiA: | | | | | | | |
| Metcalf | 80 | Slight | | Slight | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| MkA: | | | | | | | |
| Mollville | 80 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |
| Kildare | 15 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |
| MlA: | | | | | | | |
| Mollville | 90 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |
| Mm: | | | | | | | |
| Mooreville | 50 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| Mantachie | 35 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| | | | | | | Wetness | 0.50 |
| RgC: | | | | | | | |
| Redsprings | 80 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| RnB: | | | | | | | |
| Rentzel | 80 | Slight | | Slight | | Well suited | |
| SaC: | | | | | | | |
| Sacul | 85 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| SlC: | | | | | | | |
| Sailes | 85 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |

Table 9.--Hazard of Erosion and Suitability for Roads on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Hazard of off-road or off-trail erosion: Rating class and limiting features | Value | Hazard of erosion on roads and trails: Rating class and limiting features | Value | Suitability for roads (natural surface): Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| Sm: | | | | | | | |
| Sardis | 60 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| Manco | 40 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Low strength | 0.50 |
| | | | | | | Wetness | 0.50 |
| So: | | | | | | | |
| Socagee | 80 | Slight | | Slight | | Poorly suited | |
| | | | | | | Flooding | 1.00 |
| | | | | | | Wetness | 1.00 |
| | | | | | | Low strength | 0.50 |
| TnB: | | | | | | | |
| Tenaha | 80 | Slight | | Moderate | | Well suited | |
| | | | | Slope/erodibility | 0.50 | | |
| TnD: | | | | | | | |
| Tenaha | 80 | Slight | | Severe | | Moderately suited | |
| | | | | Slope/erodibility | 0.95 | Slope | 0.50 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Slight | | Slight | | Moderately suited | |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Slight | | Slight | | Poorly suited | |
| | | | | | | Ponding | 1.00 |
| | | | | | | Wetness | 0.50 |
| | | | | | | Low strength | 0.50 |

Table 10.--Woodland Planting and Harvesting

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Suitability for hand planting: Rating class and limiting features | Value | Suitability for mechanical planting: Rating class and limiting features | Value | Suitability for use of harvesting equipment: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| AaB: | | | | | | | |
| Alazan | 85 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| AsA: | | | | | | | |
| Ashford | 90 | Poorly suited | | Poorly suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | Low strength | 0.50 |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| BaD: | | | | | | | |
| Bernaldo | 90 | Well suited | | Moderately suited | | Moderately suited | |
| | | | | Slope | 0.50 | Low strength | 0.50 |
| Bg: | | | | | | | |
| Bibb | 80 | Well suited | | Well suited | | Well suited | |
| BoC: | | | | | | | |
| Bowie | 80 | Well suited | | Well suited | | Well suited | |
| BrB: | | | | | | | |
| Briley | 85 | Well suited | | Well suited | | Well suited | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Well suited | | Moderately suited | | Well suited | |
| | | | | Slope | 0.50 | | |
| Redsprings | 35 | Moderately suited | | Moderately suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | | |
| | | | | Slope | 0.50 | | |
| CrG: | | | | | | | |
| Cuthbert | 60 | Well suited | | Unsuited | | Moderately suited | |
| | | | | Slope | 1.00 | Slope | 0.50 |
| | | | | Rock fragments | 0.50 | | |
| Redsprings | 25 | Moderately suited | | Unsuited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.50 | Slope | 1.00 | Slope | 0.50 |
| | | | | Stickiness; high plasticity index | 0.50 | | |

Table 10.--Woodland Planting and Harvesting--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for hand planting: Rating class and limiting features | Value | Suitability for mechanical planting: Rating class and limiting features | Value | Suitability for use of harvesting equipment: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| CtE: | | | | | | | |
| Cuthbert | 80 | Moderately suited | | Moderately suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | | |
| | | | | Slope | 0.50 | | |
| CuE: | | | | | | | |
| Cuthbert | 80 | Moderately suited | | Moderately suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | | |
| | | | | Slope | 0.50 | | |
| | | | | Rock fragments | 0.50 | | |
| Cy: | | | | | | | |
| Cypress | 90 | Poorly suited | | Poorly suited | | Poorly suited | |
| | | Wetness | 0.75 | Wetness | 0.75 | Wetness | 1.00 |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | Low strength | 0.50 |
| DaB: | | | | | | | |
| Darco | 80 | Well suited | | Well suited | | Well suited | |
| DaE: | | | | | | | |
| Darco | 80 | Well suited | | Moderately suited | | Well suited | |
| | | | | Slope | 0.50 | | |
| DuA: | | | | | | | |
| Duffern | 80 | Moderately suited | | Moderately suited | | Moderately suited | |
| | | Sandiness | 0.50 | Sandiness | 0.50 | Sandiness | 0.50 |
| EeB: | | | | | | | |
| Eastwood | 90 | Poorly suited | | Poorly suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | Low strength | 0.50 |
| EeD: | | | | | | | |
| Eastwood | 90 | Poorly suited | | Poorly suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | Low strength | 0.50 |
| | | | | Slope | 0.50 | | |
| ElA: | | | | | | | |
| Elrose | 85 | Well suited | | Well suited | | Well suited | |
| EtA: | | | | | | | |
| Erno | 50 | Well suited | | Well suited | | Well suited | |
| Thage | 35 | Well suited | | Well suited | | Well suited | |
| EyB: | | | | | | | |
| Eylau | 80 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| GaA: | | | | | | | |
| Gallime | 75 | Well suited | | Well suited | | Well suited | |

Table 10.--Woodland Planting and Harvesting--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for hand planting | | Suitability for mechanical planting | | Suitability for use of harvesting equipment | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| GaC: | | | | | | | |
| Gallime | 48 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| Guyton | 42 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| Gf: | | | | | | | |
| Gladewater | 90 | Poorly suited | | Poorly suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | Low strength | 0.50 |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| HaA: | | | | | | | |
| Hainesville | 90 | Moderately suited | | Moderately suited | | Moderately suited | |
| | | Sandiness | 0.50 | Sandiness | 0.50 | Sandiness | 0.50 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Well suited | | Well suited | | Well suited | |
| Iu: | | | | | | | |
| Iulus | 80 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| KiC: | | | | | | | |
| Kirvin | 80 | Poorly suited | | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | | |
| | | | | Rock fragments | 0.50 | | |
| KiD: | | | | | | | |
| Kirvin | 95 | Poorly suited | | Poorly suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | Low strength | 0.50 |
| | | | | | | Stickiness; high plasticity index | 0.50 |
| KrC: | | | | | | | |
| Kirvin | 80 | Poorly suited | | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.75 | Stickiness; high plasticity index | 0.75 | | |
| KuA: | | | | | | | |
| Kullit | 85 | Well suited | | Well suited | | Well suited | |
| LcB: | | | | | | | |
| Latch | 90 | Well suited | | Well suited | | Well suited | |
| LmB: | | | | | | | |
| Latch | 60 | Well suited | | Well suited | | Well suited | |
| Mollville | 40 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |

Table 10.--Woodland Planting and Harvesting--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for hand planting: Rating class and limiting features | Value | Suitability for mechanical planting: Rating class and limiting features | Value | Suitability for use of harvesting equipment: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| LtB: | | | | | | | |
| Latex | 80 | Well suited | | Well suited | | Well suited | |
| LuC: | | | | | | | |
| Lilbert | 80 | Well suited | | Well suited | | Well suited | |
| Mf: | | | | | | | |
| Mantachie | 80 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| MiA: | | | | | | | |
| Metcalf | 80 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| MkA: | | | | | | | |
| Mollville | 80 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| Kildare | 15 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| MlA: | | | | | | | |
| Mollville | 90 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| Mm: | | | | | | | |
| Mooreville | 50 | Moderately suited | | Moderately suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | Low strength | 0.50 |
| Mantachie | 35 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| RgC: | | | | | | | |
| Redsprings | 80 | Moderately suited | | Moderately suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | | |
| RnB: | | | | | | | |
| Rentzel | 80 | Well suited | | Well suited | | Well suited | |
| SaC: | | | | | | | |
| Sacul | 85 | Moderately suited | | Moderately suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | | |
| SlC: | | | | | | | |
| Sailes | 85 | Well suited | | Well suited | | Well suited | |
| Sm: | | | | | | | |
| Sardis | 60 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |
| Manco | 40 | Well suited | | Well suited | | Moderately suited | |
| | | | | | | Low strength | 0.50 |

Table 10.--Woodland Planting and Harvesting--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for hand planting | | Suitability for mechanical planting | | Suitability for use of harvesting equipment | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| So: | | | | | | | |
| Socagee | 80 | Moderately suited | | Moderately suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | Low strength | 0.50 |
| TnB: | | | | | | | |
| Tenaha | 80 | Well suited | | Well suited | | Well suited | |
| TnD: | | | | | | | |
| Tenaha | 80 | Well suited | | Moderately suited | | Well suited | |
| | | | | Slope | 0.50 | | |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Well suited | | Moderately suited | | Moderately suited | |
| | | | | Rock fragments | 0.50 | Stickiness; high plasticity index | 0.50 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Moderately suited | | Moderately suited | | Moderately suited | |
| | | Stickiness; high plasticity index | 0.50 | Stickiness; high plasticity index | 0.50 | Low strength | 0.50 |

Table 11.--Woodland Site Preparation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Suitability for mechanical site preparation (surface) | | Suitability for mechanical site preparation (deep) | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | |
| Alazan | 85 | Well suited | | Well suited | |
| AsA: | | | | | |
| Ashford | 90 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |
| BaB: | | | | | |
| Bernaldo | 80 | Well suited | | Well suited | |
| BaD: | | | | | |
| Bernaldo | 90 | Well suited | | Well suited | |
| Bg: | | | | | |
| Bibb | 80 | Well suited | | Well suited | |
| BoC: | | | | | |
| Bowie | 80 | Well suited | | Well suited | |
| BrB: | | | | | |
| Briley | 85 | Well suited | | Well suited | |
| CrF: | | | | | |
| Cuthbert | 50 | Well suited | | Well suited | |
| Redsprings | 35 | Well suited | | Well suited | |
| CrG: | | | | | |
| Cuthbert | 60 | Poorly suited | | Poorly suited | |
| | | Slope | 0.50 | Slope | 0.50 |
| Redsprings | 25 | Poorly suited | | Poorly suited | |
| | | Slope | 0.50 | Slope | 0.50 |
| CtE: | | | | | |
| Cuthbert | 80 | Well suited | | Well suited | |
| CuE: | | | | | |
| Cuthbert | 80 | Well suited | | Well suited | |
| Cy: | | | | | |
| Cypress | 90 | Poorly suited | | Unsuited | |
| | | Wetness | 0.75 | Wetness | 1.00 |
| | | Stickiness; high plasticity index | 0.50 | | |
| DaB: | | | | | |
| Darco | 80 | Well suited | | Well suited | |

Table 11.--Woodland Site Preparation--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for mechanical site preparation (surface) | | Suitability for mechanical site preparation (deep) | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| DaE: | | | | | |
| Darco | 80 | Well suited | | Well suited | |
| DuA: | | | | | |
| Duffern | 80 | Well suited | | Well suited | |
| EeB: | | | | | |
| Eastwood | 90 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |
| EeD: | | | | | |
| Eastwood | 90 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |
| ElA: | | | | | |
| Elrose | 85 | Well suited | | Well suited | |
| EtA: | | | | | |
| Erno | 50 | Well suited | | Well suited | |
| Thage | 35 | Well suited | | Well suited | |
| EyB: | | | | | |
| Eylau | 80 | Well suited | | Well suited | |
| GaA: | | | | | |
| Gallime | 75 | Well suited | | Well suited | |
| GaC: | | | | | |
| Gallime | 48 | Well suited | | Well suited | |
| Guyton | 42 | Well suited | | Well suited | |
| Gf: | | | | | |
| Gladewater | 90 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |
| HaA: | | | | | |
| Hainesville | 90 | Well suited | | Well suited | |
| Hb: | | | | | |
| Hannahatchee | 95 | Well suited | | Well suited | |
| Iu: | | | | | |
| Iulus | 80 | Well suited | | Well suited | |
| KiC: | | | | | |
| Kirvin | 80 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |

Table 11.--Woodland Site Preparation--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for mechanical site preparation (surface) | | Suitability for mechanical site preparation (deep) | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| KiD: | | | | | |
| Kirvin | 95 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |
| KrC: | | | | | |
| Kirvin | 80 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |
| KuA: | | | | | |
| Kullit | 85 | Well suited | | Well suited | |
| LcB: | | | | | |
| Latch | 90 | Well suited | | Well suited | |
| LmB: | | | | | |
| Latch | 60 | Well suited | | Well suited | |
| Mollville | 40 | Well suited | | Well suited | |
| LtB: | | | | | |
| Latex | 80 | Well suited | | Well suited | |
| LuC: | | | | | |
| Lilbert | 80 | Well suited | | Well suited | |
| Mf: | | | | | |
| Mantachie | 80 | Well suited | | Well suited | |
| MiA: | | | | | |
| Metcalf | 80 | Well suited | | Well suited | |
| MkA: | | | | | |
| Mollville | 80 | Well suited | | Well suited | |
| Kildare | 15 | Well suited | | Well suited | |
| MlA: | | | | | |
| Mollville | 90 | Well suited | | Well suited | |
| Mm: | | | | | |
| Mooreville | 50 | Well suited | | Well suited | |
| Mantachie | 35 | Well suited | | Well suited | |
| RgC: | | | | | |
| Redsprings | 80 | Well suited | | Well suited | |
| RnB: | | | | | |
| Rentzel | 80 | Well suited | | Well suited | |
| SaC: | | | | | |
| Sacul | 85 | Poorly suited | | Well suited | |
| | | Stickiness; high plasticity index | 0.50 | | |

Table 11.--Woodland Site Preparation--Continued

| Map symbol and soil name | Pct. of map unit | Suitability for mechanical site preparation (surface) | | Suitability for mechanical site preparation (deep) | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| SlC: | | | | | |
| Sailes | 85 | Well suited | | Well suited | |
| Sm: | | | | | |
| Sardis | 60 | Well suited | | Well suited | |
| Manco | 40 | Well suited | | Well suited | |
| So: | | | | | |
| Socagee | 80 | Well suited | | Well suited | |
| TnB: | | | | | |
| Tenaha | 80 | Well suited | | Well suited | |
| TnD: | | | | | |
| Tenaha | 80 | Well suited | | Well suited | |
| Ud: | | | | | |
| Udorthents, gravelly | 85 | Well suited | | Well suited | |
| WrA: | | | | | |
| Wrightsville | 90 | Well suited | | Well suited | |

Table 12.--Damage to Soil by Fire, and Seedling Mortality on Woodland

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential for damage to soil by fire: Rating class and limiting features | Value | Potential for seedling mortality: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| AaB: | | | | | |
| Alazan | 85 | High | | Low | |
| | | Texture/surface depth/rock fragments | 1.00 | | |
| AsA: | | | | | |
| Ashford | 90 | High | | High | |
| | | Texture/surface depth/rock fragments | 1.00 | Wetness | 1.00 |
| | | | | Soil reaction | 0.50 |
| BaB: | | | | | |
| Bernaldo | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| BaD: | | | | | |
| Bernaldo | 90 | High | | Low | |
| | | Texture/surface depth/rock fragments | 1.00 | | |
| Bg: | | | | | |
| Bibb | 80 | Low | | High | |
| | | Texture/rock fragments | 0.10 | Wetness | 1.00 |
| BoC: | | | | | |
| Bowie | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| BrB: | | | | | |
| Briley | 85 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| CrF: | | | | | |
| Cuthbert | 50 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Redsprings | 35 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |

Table 12.-- Damage to Soil by Fire, and Seedling Mortality on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Potential for damage to soil by fire: Rating class and limiting features | Value | Potential for seedling mortality: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| CrG: | | | | | |
| Cuthbert | 60 | Moderate | | Moderate | |
| | | Texture/rock fragments | 0.50 | Available water | 0.50 |
| Redsprings | 25 | Moderate | | Moderate | |
| | | Texture/rock fragments | 0.50 | Available water | 0.50 |
| CtE: | | | | | |
| Cuthbert | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| CuE: | | | | | |
| Cuthbert | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Cy: | | | | | |
| Cypress | 90 | Low | | High | |
| | | | | Wetness | 1.00 |
| | | | | Soil reaction | 0.50 |
| DaB: | | | | | |
| Darco | 80 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| DaE: | | | | | |
| Darco | 80 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| DuA: | | | | | |
| Duffern | 80 | High | | Low | |
| | | Texture/surface depth/rock fragments | 1.00 | | |
| EeB: | | | | | |
| Eastwood | 90 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| EeD: | | | | | |
| Eastwood | 90 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| ElA: | | | | | |
| Elrose | 85 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |

Table 12.-- Damage to Soil by Fire, and Seedling Mortality on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Potential for damage to soil by fire: Rating class and limiting features | Value | Potential for seedling mortality: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| EtA: | | | | | |
| Erno | 50 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Thage | 35 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| EyB: | | | | | |
| Eylau | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| GaA: | | | | | |
| Gallime | 75 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| GaC: | | | | | |
| Gallime | 48 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Guyton | 42 | Low | | High | |
| | | Texture/rock fragments | 0.10 | Wetness | 1.00 |
| Gf: | | | | | |
| Gladewater | 90 | Moderate | | High | |
| | | Texture/rock fragments | 0.50 | Wetness | 1.00 |
| HaA: | | | | | |
| Hainesville | 90 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| Hb: | | | | | |
| Hannahatchee | 95 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Iu: | | | | | |
| Iulus | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| KiC: | | | | | |
| Kirvin | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |

Table 12.-- Damage to Soil by Fire, and Seedling Mortality on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Potential for damage to soil by fire: Rating class and limiting features | Value | Potential for seedling mortality: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| KiD: | | | | | |
| Kirvin | 95 | High | | Moderate | |
| | | Texture/surface depth/rock fragments | 1.00 | Soil reaction | 0.50 |
| KrC: | | | | | |
| Kirvin | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| KuA: | | | | | |
| Kullit | 85 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| LcB: | | | | | |
| Latch | 90 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| LmB: | | | | | |
| Latch | 60 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| Mollville | 40 | Moderate | | High | |
| | | Texture/rock fragments | 0.50 | Wetness | 1.00 |
| LtB: | | | | | |
| Latex | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| LuC: | | | | | |
| Lilbert | 80 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| Mf: | | | | | |
| Mantachie | 80 | Low | | High | |
| | | Texture/rock fragments | 0.10 | Wetness | 1.00 |
| MiA: | | | | | |
| Metcalf | 80 | High | | Low | |
| | | Texture/surface depth/rock fragments | 1.00 | | |

Table 12.-- Damage to Soil by Fire, and Seedling Mortality on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Potential for damage to soil by fire: Rating class and limiting features | Value | Potential for seedling mortality: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| MkA: | | | | | |
| Mollville----------- | 80 | Moderate | | High | |
| | | Texture/rock fragments | 0.50 | Wetness | 1.00 |
| Kildare------------- | 15 | Moderate | | High | |
| | | Texture/rock fragments | 0.50 | Wetness | 1.00 |
| MlA: | | | | | |
| Mollville----------- | 90 | Moderate | | High | |
| | | Texture/rock fragments | 0.50 | Wetness | 1.00 |
| Mm: | | | | | |
| Mooreville---------- | 50 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Mantachie----------- | 35 | Low | | High | |
| | | Texture/rock fragments | 0.10 | Wetness | 1.00 |
| RgC: | | | | | |
| Redsprings---------- | 80 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| RnB: | | | | | |
| Rentzel------------- | 80 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| SaC: | | | | | |
| Sacul--------------- | 85 | Low | | Low | |
| | | Texture/rock fragments | 0.10 | | |
| SlC: | | | | | |
| Sailes-------------- | 85 | Moderate | | Low | |
| | | Texture/rock fragments | 0.50 | | |
| Sm: | | | | | |
| Sardis-------------- | 60 | Low | | Low | |
| | | Texture/rock fragments | 0.10 | | |
| Manco--------------- | 40 | Low | | High | |
| | | Texture/rock fragments | 0.10 | Wetness | 1.00 |
| | | | | Soil reaction | 0.50 |

Table 12.-- Damage to Soil by Fire, and Seedling Mortality on Woodland--Continued

| Map symbol and soil name | Pct. of map unit | Potential for damage to soil by fire: Rating class and limiting features | Value | Potential for seedling mortality: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| So: | | | | | |
| Socagee | 80 | Low | | High | |
| | | Texture/rock fragments | 0.10 | Wetness | 1.00 |
| | | | | Soil reaction | 0.50 |
| TnB: | | | | | |
| Tenaha | 80 | High | | Low | |
| | | Texture/rock fragments | 1.00 | | |
| TnD: | | | | | |
| Tenaha | 80 | High | | Low | |
| | | Texture/surface depth/rock fragments | 1.00 | | |
| Ud: | | | | | |
| Udorthents, gravelly | 85 | Low | | Low | |
| WrA: | | | | | |
| Wrightsville | 90 | Moderate | | High | |
| | | Texture/rock fragments | 0.50 | Wetness | 1.00 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Camp areas | | Picnic areas | | Playgrounds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.39 | Depth to saturated zone | 0.19 | Depth to saturated zone | 0.39 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 1.00 | Slow water movement | 1.00 | Slow water movement | 1.00 |
| | | Too clayey | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | | Not limited | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Slope | 0.97 |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| BoC: | | | | | | | |
| Bowie | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slope | 0.50 |
| | | | | | | Slow water movement | 0.26 |
| BrB: | | | | | | | |
| Briley | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.95 | Too sandy | 0.95 | Too sandy | 0.95 |
| | | | | | | Slope | 0.50 |
| CrF: | | | | | | | |
| Cuthbert | 50 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Slow water movement | 0.50 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Gravel content | 0.89 |
| | | | | | | Slow water movement | 0.50 |
| Redsprings | 35 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Gravel content | 1.00 |
| | | Gravel content | 0.01 | Gravel content | 0.01 | Slow water movement | 0.26 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds--Continued

| Map symbol and soil name | Pct. of map unit | Camp areas: Rating class and limiting features | Camp areas: Value | Picnic areas: Rating class and limiting features | Picnic areas: Value | Playgrounds: Rating class and limiting features | Playgrounds: Value |
|---|---|---|---|---|---|---|---|
| CrG: | | | | | | | |
| Cuthbert------------ | 60 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Slope | 1.00 |
| | | Gravel content | 0.73 | Gravel content | 0.73 | Gravel content | 1.00 |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slow water movement | 0.26 |
| Redsprings---------- | 25 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Slope | 1.00 |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Gravel content | 1.00 |
| | | Gravel content | 0.01 | Gravel content | 0.01 | Slow water movement | 0.26 |
| CtE: | | | | | | | |
| Cuthbert------------ | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Slow water movement | 0.50 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Gravel content | 0.89 |
| | | | | | | Slow water movement | 0.50 |
| CuE: | | | | | | | |
| Cuthbert------------ | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Gravel content | 0.73 | Gravel content | 0.73 | Slope | 1.00 |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Gravel content | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Slow water movement | 0.26 |
| Cy: | | | | | | | |
| Cypress------------- | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Flooding | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Ponding | 1.00 | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 1.00 | Flooding | 0.40 | Slow water movement | 1.00 |
| DaB: | | | | | | | |
| Darco--------------- | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Too sandy | 0.85 |
| | | | | | | Slope | 0.50 |
| DaE: | | | | | | | |
| Darco--------------- | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Slope | 1.00 |
| | | Slope | 0.63 | Slope | 0.63 | Too sandy | 0.85 |
| DuA: | | | | | | | |
| Duffern------------- | 80 | Very limited | | Very limited | | Very limited | |
| | | Too sandy | 1.00 | Too sandy | 1.00 | Too sandy | 1.00 |
| | | | | | | Slope | 0.12 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds--Continued

| Map symbol and soil name | Pct. of map unit | Camp areas: Rating class and limiting features | Camp areas: Value | Picnic areas: Rating class and limiting features | Picnic areas: Value | Playgrounds: Rating class and limiting features | Playgrounds: Value |
|---|---|---|---|---|---|---|---|
| EeB: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slow water movement | 1.00 | Slow water movement | 1.00 |
| | | | | | | Slope | 0.12 |
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slow water movement | 1.00 | Slow water movement | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Slope | 1.00 |
| ElA: | | | | | | | |
| Elrose | 85 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Gravel content | 0.86 |
| | | | | | | Slope | 0.50 |
| EtA: | | | | | | | |
| Erno | 50 | Not limited | | Not limited | | Not limited | |
| Thage | 35 | Not limited | | Not limited | | Not limited | |
| EyB: | | | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slow water movement | 0.26 |
| GaA: | | | | | | | |
| Gallime | 75 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Slope | 0.12 |
| GaC: | | | | | | | |
| Gallime | 48 | Not limited | | Not limited | | Not limited | |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.94 | Slow water movement | 0.94 | Slow water movement | 0.94 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Too clayey | 1.00 | Slow water movement | 1.00 | Flooding | 1.00 |
| | | Slow water movement | 1.00 | Flooding | 0.40 | Slow water movement | 1.00 |
| HaA: | | | | | | | |
| Hainesville | 90 | Very limited | | Very limited | | Very limited | |
| | | Too sandy | 1.00 | Too sandy | 1.00 | Too sandy | 1.00 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Very limited | | Not limited | | Somewhat limited | |
| | | Flooding | 1.00 | | | Flooding | 0.60 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds--Continued

| Map symbol and soil name | Pct. of map unit | Camp areas: Rating class and limiting features | Camp areas: Value | Picnic areas: Rating class and limiting features | Picnic areas: Value | Playgrounds: Rating class and limiting features | Playgrounds: Value |
|---|---|---|---|---|---|---|---|
| Iu: | | | | | | | |
| Iulus | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| KiC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Gravel content | 0.87 | Gravel content | 0.87 | Gravel content | 1.00 |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slope | 0.50 |
| | | | | | | Slow water movement | 0.26 |
| KiD: | | | | | | | |
| Kirvin | 95 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slow water movement | 0.26 |
| | | | | | | Slope | 0.12 |
| KrC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slow water movement | 0.26 |
| | | | | | | Slope | 0.12 |
| KuA: | | | | | | | |
| Kullit | 85 | Not limited | | Not limited | | Not limited | |
| LcB: | | | | | | | |
| Latch | 90 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.92 | Too sandy | 0.92 | Too sandy | 0.92 |
| LmB: | | | | | | | |
| Latch | 60 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.92 | Too sandy | 0.92 | Too sandy | 0.92 |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 0.94 | Slow water movement | 0.94 | Slow water movement | 0.94 |
| LtB: | | | | | | | |
| Latex | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.94 | Slow water movement | 0.94 | Slow water movement | 0.94 |
| LuC: | | | | | | | |
| Lilbert | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Too sandy | 0.85 |
| | | | | | | Slope | 0.50 |
| Mf: | | | | | | | |
| Mantachie | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.94 | Depth to saturated zone | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds--Continued

| Map symbol and soil name | Pct. of map unit | Camp areas | | Picnic areas | | Playgrounds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| MiA: | | | | | | | |
| Metcalf | 80 | Very limited | | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slow water movement | 1.00 | Slow water movement | 1.00 |
| | | Depth to saturated zone | 0.39 | Depth to saturated zone | 0.19 | Depth to saturated zone | 0.39 |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 0.94 | Slow water movement | 0.94 | Slow water movement | 0.94 |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Sodium content | 1.00 | Depth to saturated zone | 1.00 | Sodium content | 1.00 |
| | | Ponding | 1.00 | Sodium content | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 1.00 | Slow water movement | 1.00 | Slow water movement | 1.00 |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 0.94 | Slow water movement | 0.94 | Slow water movement | 0.94 |
| Mm: | | | | | | | |
| Mooreville | 50 | Very limited | | Somewhat limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| | | Depth to saturated zone | 0.07 | Depth to saturated zone | 0.03 | Depth to saturated zone | 0.07 |
| Mantachie | 35 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.94 | Depth to saturated zone | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| RgC: | | | | | | | |
| Redsprings | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Gravel content | 1.00 |
| | | Gravel content | 0.01 | Gravel content | 0.01 | Slope | 0.50 |
| | | | | | | Slow water movement | 0.26 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds--Continued

| Map symbol and soil name | Pct. of map unit | Camp areas: Rating class and limiting features | Camp areas: Value | Picnic areas: Rating class and limiting features | Picnic areas: Value | Playgrounds: Rating class and limiting features | Playgrounds: Value |
|---|---|---|---|---|---|---|---|
| RnB: | | | | | | | |
| Rentzel | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.92 | Too sandy | 0.92 | Too sandy | 0.92 |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slow water movement | 0.26 |
| | | Depth to saturated zone | 0.07 | Depth to saturated zone | 0.03 | Depth to saturated zone | 0.07 |
| SaC: | | | | | | | |
| Sacul | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.94 | Slow water movement | 0.94 | Gravel content | 0.99 |
| | | | | | | Slow water movement | 0.94 |
| | | | | | | Slope | 0.12 |
| SlC: | | | | | | | |
| Sailes | 85 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Gravel content | 0.32 |
| | | | | | | Slope | 0.12 |
| Sm: | | | | | | | |
| Sardis | 60 | Very limited | | Somewhat limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| | | Depth to saturated zone | 0.07 | Depth to saturated zone | 0.03 | Depth to saturated zone | 0.07 |
| Manco | 40 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.94 | Depth to saturated zone | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| So: | | | | | | | |
| Socagee | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.40 | Flooding | 1.00 |
| | | Slow water movement | 0.26 | Slow water movement | 0.26 | Slow water movement | 0.26 |
| TnB: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Too sandy | 0.85 |
| | | | | | | Slope | 0.12 |
| TnD: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Too sandy | 0.85 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Gravel content | 0.70 |

Table 13.--Camp Areas, Picnic Areas, and Playgrounds--Continued

| Map symbol and soil name | Pct. of map unit | Camp areas | | Picnic areas | | Playgrounds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| WrA: | | | | | | | |
| Wrightsville-------- | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Ponding | 1.00 | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 1.00 | Depth to saturated zone | 0.99 | Slow water movement | 1.00 |

Table 14.--Paths, Trails, and Golf Course Fairways

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Paths and trails | | Off-road motorcycle trails | | Golf course fairways | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Depth to saturated zone | 0.19 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Too clayey | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | | Not limited | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Not limited | | Not limited | | Not limited | |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 1.00 |
| BoC: | | | | | | | |
| Bowie | 80 | Not limited | | Not limited | | Not limited | |
| BrB: | | | | | | | |
| Briley | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.95 | Too sandy | 0.95 | Droughty | 0.02 |
| CrF: | | | | | | | |
| Cuthbert | 50 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Slope | 0.16 |
| Redsprings | 35 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Slope | 0.16 |
| | | | | | | Gravel content | 0.01 |
| CrG: | | | | | | | |
| Cuthbert | 60 | Very limited | | Somewhat limited | | Very limited | |
| | | Slope | 1.00 | Slope | 0.08 | Too steep | 1.00 |
| | | | | | | Gravel content | 0.73 |
| | | | | | | Large stones content | 0.01 |
| Redsprings | 25 | Very limited | | Somewhat limited | | Very limited | |
| | | Slope | 1.00 | Slope | 0.08 | Too steep | 1.00 |
| | | | | | | Gravel content | 0.01 |

Table 14.--Paths, Trails, and Golf Course Fairways--Continued

| Map symbol and soil name | Pct. of map unit | Paths and trails | | Off-road motorcycle trails | | Golf course fairways | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CtE: | | | | | | | |
| Cuthbert | 80 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Slope | 0.16 |
| CuE: | | | | | | | |
| Cuthbert | 80 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Gravel content | 0.73 |
| | | | | | | Slope | 0.16 |
| | | | | | | Large stones content | 0.01 |
| Cy: | | | | | | | |
| Cypress | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Ponding | 1.00 | Flooding | 1.00 |
| | | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 1.00 |
| DaB: | | | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Droughty | 0.34 |
| DaE: | | | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Slope | 0.63 |
| | | | | | | Droughty | 0.34 |
| DuA: | | | | | | | |
| Duffern | 80 | Very limited | | Very limited | | Somewhat limited | |
| | | Too sandy | 1.00 | Too sandy | 1.00 | Droughty | 0.91 |
| EeB: | | | | | | | |
| Eastwood | 90 | Not limited | | Not limited | | Not limited | |
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Somewhat limited | |
| | | Water erosion | 1.00 | Water erosion | 1.00 | Slope | 0.16 |
| ElA: | | | | | | | |
| Elrose | 85 | Not limited | | Not limited | | Not limited | |
| EtA: | | | | | | | |
| Erno | 50 | Not limited | | Not limited | | Not limited | |
| Thage | 35 | Not limited | | Not limited | | Not limited | |
| EyB: | | | | | | | |
| Eylau | 80 | Not limited | | Not limited | | Not limited | |
| GaA: | | | | | | | |
| Gallime | 75 | Not limited | | Not limited | | Not limited | |

Table 14.--Paths, Trails, and Golf Course Fairways--Continued

| Map symbol and soil name | Pct. of map unit | Paths and trails: Rating class and limiting features | Value | Off-road motorcycle trails: Rating class and limiting features | Value | Golf course fairways: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| GaC: | | | | | | | |
| Gallime | 48 | Not limited | | Not limited | | Not limited | |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Very limited | |
| | | Too clayey | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Flooding | 0.40 | Flooding | 0.40 | Flooding | 1.00 |
| HaA: | | | | | | | |
| Hainesville | 90 | Very limited | | Very limited | | Somewhat limited | |
| | | Too sandy | 1.00 | Too sandy | 1.00 | Droughty | 0.85 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Flooding | 0.60 |
| Iu: | | | | | | | |
| Iulus | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Flooding | 0.40 | Flooding | 0.40 | Flooding | 1.00 |
| KiC: | | | | | | | |
| Kirvin | 80 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Gravel content | 0.87 |
| KiD: | | | | | | | |
| Kirvin | 95 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Droughty | 0.79 |
| KrC: | | | | | | | |
| Kirvin | 80 | Not limited | | Not limited | | Not limited | |
| KuA: | | | | | | | |
| Kullit | 85 | Not limited | | Not limited | | Not limited | |
| LcB: | | | | | | | |
| Latch | 90 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.92 | Too sandy | 0.92 | Droughty | 0.34 |
| LmB: | | | | | | | |
| Latch | 60 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.92 | Too sandy | 0.92 | Droughty | 0.34 |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |

Table 14.--Paths, Trails, and Golf Course Fairways--Continued

| Map symbol and soil name | Pct. of map unit | Paths and trails |  | Off-road motorcycle trails |  | Golf course fairways |  |
|---|---|---|---|---|---|---|---|
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| LtB: |  |  |  |  |  |  |  |
| Latex | 80 | Not limited |  | Not limited |  | Not limited |  |
| LuC: |  |  |  |  |  |  |  |
| Lilbert | 80 | Somewhat limited |  | Somewhat limited |  | Somewhat limited |  |
|  |  | Too sandy | 0.85 | Too sandy | 0.85 | Droughty | 0.13 |
| Mf: |  |  |  |  |  |  |  |
| Mantachie | 80 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | Depth to saturated zone | 0.86 | Depth to saturated zone | 0.86 | Flooding | 1.00 |
|  |  | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 0.94 |
| MiA: |  |  |  |  |  |  |  |
| Metcalf | 80 | Not limited |  | Not limited |  | Somewhat limited |  |
|  |  |  |  |  |  | Depth to saturated zone | 0.19 |
| MkA: |  |  |  |  |  |  |  |
| Mollville | 80 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
|  |  | Ponding | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| Kildare | 15 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
|  |  | Ponding | 1.00 | Ponding | 1.00 | Sodium content | 1.00 |
|  |  |  |  |  |  | Depth to saturated zone | 1.00 |
| MlA: |  |  |  |  |  |  |  |
| Mollville | 90 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Ponding | 1.00 |
|  |  | Ponding | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| Mm: |  |  |  |  |  |  |  |
| Mooreville | 50 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | Flooding | 0.40 | Flooding | 0.40 | Flooding | 1.00 |
|  |  |  |  |  |  | Depth to saturated zone | 0.03 |
| Mantachie | 35 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | Depth to saturated zone | 0.86 | Depth to saturated zone | 0.86 | Flooding | 1.00 |
|  |  | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 0.94 |
| RgC: |  |  |  |  |  |  |  |
| Redsprings | 80 | Not limited |  | Not limited |  | Somewhat limited |  |
|  |  |  |  |  |  | Gravel content | 0.01 |

Table 14.--Paths, Trails, and Golf Course Fairways--Continued

| Map symbol and soil name | Pct. of map unit | Paths and trails: Rating class and limiting features | Paths and trails: Value | Off-road motorcycle trails: Rating class and limiting features | Off-road motorcycle trails: Value | Golf course fairways: Rating class and limiting features | Golf course fairways: Value |
|---|---|---|---|---|---|---|---|
| RnB: | | | | | | | |
| Rentzel | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.92 | Too sandy | 0.92 | Droughty | 0.07 |
| | | | | | | Depth to saturated zone | 0.03 |
| SaC: | | | | | | | |
| Sacul | 85 | Not limited | | Not limited | | Not limited | |
| SlC: | | | | | | | |
| Sailes | 85 | Not limited | | Not limited | | Not limited | |
| Sm: | | | | | | | |
| Sardis | 60 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Flooding | 0.40 | Flooding | 0.40 | Flooding | 1.00 |
| | | | | | | Depth to saturated zone | 0.03 |
| Manco | 40 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 0.86 | Depth to saturated zone | 0.86 | Flooding | 1.00 |
| | | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 0.94 |
| So: | | | | | | | |
| Socagee | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 1.00 |
| TnB: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Droughty | 0.01 |
| TnD: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too sandy | 0.85 | Too sandy | 0.85 | Slope | 0.16 |
| | | | | | | Droughty | 0.01 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Droughty | 0.69 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 0.99 | Depth to saturated zone | 0.99 | Depth to saturated zone | 0.99 |

Table 15.--Grain and Seed Crops, Domestic Grasses and Legumes, Irrigated Grain and Seed Crops for Food and Cover

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Grain and seed crops for food and cover | | Domestic grasses and legumes for food and cover | | Irrigated grain and seed crops for food and cover | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.75 | Wetness | 0.75 | Wetness | 0.75 |
| | | Droughty | 0.01 | | | Droughty | 0.01 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Too clayey | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Droughty | 0.84 | Percs slowly | 0.50 | Droughty | 0.84 |
| | | Percs slowly | 0.50 | | | Percs slowly | 0.50 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | | Not limited | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Very limited | | Very limited | | Very limited | |
| | | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 |
| | | | | | | Slope | 0.28 |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| BoC: | | | | | | | |
| Bowie | 80 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.32 | | | Droughty | 0.32 |
| BrB: | | | | | | | |
| Briley | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.01 | | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Very limited | | Very limited | | Very limited | |
| | | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 |
| | | Droughty | 0.76 | | | Slope | 1.00 |
| | | | | | | Droughty | 0.76 |
| Redsprings | 35 | Very limited | | Very limited | | Very limited | |
| | | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 |
| | | Droughty | 0.65 | Too gravelly, cobbly, or stony | 0.08 | Slope | 1.00 |
| | | Too gravelly, cobbly, or stony | 0.08 | | | Droughty | 0.65 |
| | | | | | | Too gravelly, cobbly, or stony | 0.08 |

Table 15.--Grain and Seed Crops, Domestic Grasses and Legumes, Irrigated Grain and Seed Crops for Food and Cover--Continued

| Map symbol and soil name | Pct. of map unit | Grain and seed crops for food and cover | | Domestic grasses and legumes for food and cover | | Irrigated grain and seed crops for food and cover | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CrG: | | | | | | | |
| Cuthbert | 60 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slope | 0.96 | Slope | 0.96 | Slope | 1.00 |
| | | Droughty | 0.96 | Too gravelly, cobbly, or stony | 0.94 | Droughty | 0.96 |
| | | Too gravelly, cobbly, or stony | 0.94 | | | Too gravelly, cobbly, or stony | 0.94 |
| Redsprings | 25 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slope | 0.96 | Slope | 0.96 | Slope | 1.00 |
| | | Droughty | 0.54 | Too gravelly, cobbly, or stony | 0.08 | Droughty | 0.54 |
| | | Too gravelly, cobbly, or stony | 0.08 | | | Too gravelly, cobbly, or stony | 0.08 |
| CtE: | | | | | | | |
| Cuthbert | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Droughty | 0.75 | | | Slope | 1.00 |
| | | | | | | Droughty | 0.75 |
| CuE: | | | | | | | |
| Cuthbert | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Too gravelly, cobbly, or stony | 0.94 | Too gravelly, cobbly, or stony | 0.94 | Slope | 1.00 |
| | | Droughty | 0.80 | | | Too gravelly, cobbly, or stony | 0.94 |
| | | | | | | Droughty | 0.80 |
| Cy: | | | | | | | |
| Cypress | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 1.00 | Percs slowly | 1.00 | Percs slowly | 1.00 |
| | | Too clayey | 0.36 | Too clayey | 0.36 | Too clayey | 0.36 |
| DaB: | | | | | | | |
| Darco | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.32 | | |
| DaE: | | | | | | | |
| Darco | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Slope | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.32 | Droughty | 1.00 |
| DuA: | | | | | | | |
| Duffern | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Droughty | 0.90 | Droughty | 1.00 |
| | | Too sandy | 1.00 | Too sandy | 0.50 | Too sandy | 0.50 |
| EeB: | | | | | | | |
| Eastwood | 90 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Percs slowly | 0.50 | Percs slowly | 0.50 | Percs slowly | 0.50 |

Table 15.--Grain and Seed Crops, Domestic Grasses and Legumes, Irrigated Grain and Seed Crops for Food and Cover--Continued

| Map symbol and soil name | Pct. of map unit | Grain and seed crops for food and cover | | Domestic grasses and legumes for food and cover | | Irrigated grain and seed crops for food and cover | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| EeD: | | | | | | | |
| Eastwood | 90 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Percs slowly | 0.50 | Percs slowly | 0.50 | Slope | 1.00 |
| | | | | | | Percs slowly | 0.50 |
| ElA: | | | | | | | |
| Elrose | 85 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.31 | | | Droughty | 0.31 |
| EtA: | | | | | | | |
| Erno | 50 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| | | Droughty | 0.11 | | | Droughty | 0.11 |
| Thage | 35 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.07 | | | Droughty | 0.07 |
| EyB: | | | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.19 | Wetness | 0.19 | Wetness | 0.19 |
| GaA: | | | | | | | |
| Gallime | 75 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.07 | | | Droughty | 0.07 |
| GaC: | | | | | | | |
| Gallime | 48 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.08 | | | Droughty | 0.08 |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Too clayey | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Percs slowly | 0.50 | Percs slowly | 0.50 | Percs slowly | 0.50 |
| | | Wetness | 0.17 | Wetness | 0.17 | Wetness | 0.17 |
| HaA: | | | | | | | |
| Hainesville | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Droughty | 0.85 | Droughty | 1.00 |
| | | Too sandy | 1.00 | Too sandy | 0.50 | Too sandy | 0.50 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Flooding | 0.50 | Flooding | 0.50 | Flooding | 0.50 |
| | | Droughty | 0.05 | | | Droughty | 0.05 |
| Iu: | | | | | | | |
| Iulus | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Flooding | 0.50 | Flooding | 0.50 | Flooding | 1.00 |
| | | Wetness | 0.04 | Wetness | 0.04 | Wetness | 0.04 |

Table 15.--Grain and Seed Crops, Domestic Grasses and Legumes, Irrigated Grain and Seed Crops for Food and Cover--Continued

| Map symbol and soil name | Pct. of map unit | Grain and seed crops for food and cover | | Domestic grasses and legumes for food and cover | | Irrigated grain and seed crops for food and cover | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| KiC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too gravelly, cobbly, or stony | 0.96 | Too gravelly, cobbly, or stony | 0.96 | Too gravelly, cobbly, or stony | 0.96 |
| | | Droughty | 0.74 | | | Droughty | 0.74 |
| KiD: | | | | | | | |
| Kirvin | 95 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Droughty | 0.78 | Droughty | 1.00 |
| | | Too clayey | 0.11 | Too clayey | 0.11 | Too clayey | 0.11 |
| KrC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.42 | | | Droughty | 0.42 |
| KuA: | | | | | | | |
| Kullit | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.32 | Wetness | 0.19 | Droughty | 0.32 |
| | | Wetness | 0.19 | | | Wetness | 0.19 |
| LcB: | | | | | | | |
| Latch | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.32 | | |
| LmB: | | | | | | | |
| Latch | 60 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.32 | | |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| LtB: | | | | | | | |
| Latex | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| | | Droughty | 0.01 | | | Droughty | 0.01 |
| LuC: | | | | | | | |
| Lilbert | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.12 | | |
| Mf: | | | | | | | |
| Mantachie | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| MiA: | | | | | | | |
| Metcalf | 80 | Very limited | | Very limited | | Very limited | |
| | | Percs slowly | 1.00 | Percs slowly | 1.00 | Percs slowly | 1.00 |
| | | Wetness | 0.75 | Wetness | 0.75 | Wetness | 0.75 |

Table 15.--Grain and Seed Crops, Domestic Grasses and Legumes, Irrigated Grain and Seed Crops for Food and Cover--Continued

| Map symbol and soil name | Pct. of map unit | Grain and seed crops for food and cover: Rating class and limiting features | Value | Domestic grasses and legumes for food and cover: Rating class and limiting features | Value | Irrigated grain and seed crops for food and cover: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Excess sodium | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 1.00 | Wetness | 1.00 | Percs slowly | 1.00 |
| | | Droughty | 0.23 | Percs slowly | 1.00 | Droughty | 0.23 |
| | | Excess Sodium | 0.01 | | | Excess Sodium | 0.01 |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| Mm: | | | | | | | |
| Mooreville | 50 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Flooding | 0.50 | Flooding | 0.50 | Flooding | 1.00 |
| | | Wetness | 0.44 | Wetness | 0.44 | Wetness | 0.44 |
| Mantachie | 35 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Droughty | 0.23 | | | Droughty | 0.23 |
| RgC: | | | | | | | |
| Redsprings | 80 | Very limited | | Very limited | | Very limited | |
| | | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 | Potentially or highly erodible | 1.00 |
| | | Droughty | 0.54 | Too gravelly, cobbly, or stony | 0.08 | Droughty | 0.54 |
| | | Too gravelly, cobbly, or stony | 0.08 | | | Too gravelly, cobbly, or stony | 0.08 |
| RnB: | | | | | | | |
| Rentzel | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Wetness | 0.44 | Wetness | 0.44 |
| | | Wetness | 0.44 | Droughty | 0.06 | | |
| SaC: | | | | | | | |
| Sacul | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Percs slowly | 0.33 | Percs slowly | 0.33 | Percs slowly | 0.33 |
| SlC: | | | | | | | |
| Sailes | 85 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Droughty | 0.01 | | | Droughty | 0.01 |

Table 15.--Grain and Seed Crops, Domestic Grasses and Legumes, Irrigated Grain and Seed Crops for Food and Cover--Continued

| Map symbol and soil name | Pct. of map unit | Grain and seed crops for food and cover | | Domestic grasses and legumes for food and cover | | Irrigated grain and seed crops for food and cover | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Sm: | | | | | | | |
| Sardis | 60 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Flooding | 0.50 | Flooding | 0.50 | Flooding | 1.00 |
| | | Wetness | 0.44 | Wetness | 0.44 | Wetness | 0.44 |
| Manco | 40 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| So: | | | | | | | |
| Socagee | 80 | Very limited | | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 | Flooding | 1.00 |
| | | Flooding | 0.50 | Flooding | 0.50 | Wetness | 1.00 |
| TnB: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.99 | Too sandy | 0.50 | Droughty | 0.99 |
| | | Too sandy | 0.50 | | | | |
| TnD: | | | | | | | |
| Tenaha | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Droughty | 1.00 | Too sandy | 0.50 | Droughty | 1.00 |
| | | Too sandy | 0.50 | Droughty | 0.01 | Slope | 1.00 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not rated | | Not rated | | Not rated | |
| WrA: | | | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 1.00 | Percs slowly | 1.00 | Percs slowly | 1.00 |

Table 16.--Irrigated Domestic Grasses and Legumes for Food and Cover, and Limitations for Burrowing Mammals and Reptiles Habitat

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Irrigated domestic grasses and legumes for food and cover | | Burrowing mammals and reptiles | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | |
| Alazan | 85 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.75 | Wetness | 0.75 |
| | | | | Too clayey | 0.05 |
| AsA: | | | | | |
| Ashford | 90 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Percs slowly | 0.50 | | |
| BaB: | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | |
| BaD: | | | | | |
| Bernaldo | 90 | Very limited | | Not limited | |
| | | Potentially or highly erodible | 1.00 | | |
| | | Slope | 0.28 | | |
| Bg: | | | | | |
| Bibb | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 |
| BoC: | | | | | |
| Bowie | 80 | Not limited | | Not limited | |
| BrB: | | | | | |
| Briley | 85 | Somewhat limited | | Not limited | |
| | | Droughty | 0.01 | | |
| CrF: | | | | | |
| Cuthbert | 50 | Very limited | | Very limited | |
| | | Potentially or highly erodible | 1.00 | Too clayey | 1.00 |
| | | Slope | 1.00 | | |
| Redsprings | 35 | Very limited | | Very limited | |
| | | Potentially or highly erodible | 1.00 | Too clayey | 1.00 |
| | | Slope | 1.00 | | |
| | | Too gravelly, cobbly, or stony | 0.08 | | |

Table 16.--Irrigated Domestic Grasses and Legumes for Food and Cover, and Limitations for Burrowing Mammals and Reptiles Habitat--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated domestic grasses and legumes for food and cover | | Burrowing mammals and reptiles | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CrG: | | | | | |
| Cuthbert------------ | 60 | Very limited | | Somewhat limited | |
| | | Slope | 1.00 | Too clayey | 0.11 |
| | | Too gravelly, cobbly, or stony | 0.94 | | |
| Redsprings---------- | 25 | Very limited | | Very limited | |
| | | Slope | 1.00 | Too clayey | 1.00 |
| | | Too gravelly, cobbly, or stony | 0.08 | | |
| CtE: | | | | | |
| Cuthbert------------ | 80 | Very limited | | Very limited | |
| | | Slope | 1.00 | Too clayey | 1.00 |
| CuE: | | | | | |
| Cuthbert------------ | 80 | Very limited | | Very limited | |
| | | Slope | 1.00 | Too clayey | 1.00 |
| | | Too gravelly, cobbly, or stony | 0.94 | | |
| Cy: | | | | | |
| Cypress------------- | 90 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Flooding | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 |
| | | Percs slowly | 1.00 | Too clayey | 0.95 |
| | | Too clayey | 0.36 | | |
| DaB: | | | | | |
| Darco--------------- | 80 | Somewhat limited | | Very limited | |
| | | Droughty | 0.32 | Dense layer | 1.00 |
| | | | | Too Sandy | 0.50 |
| DaE: | | | | | |
| Darco--------------- | 80 | Very limited | | Very limited | |
| | | Slope | 1.00 | Dense layer | 1.00 |
| | | Droughty | 0.32 | | |
| DuA: | | | | | |
| Duffern------------- | 80 | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.90 | Too Sandy | 0.50 |
| | | Too sandy | 0.50 | | |
| EeB: | | | | | |
| Eastwood------------ | 90 | Somewhat limited | | Very limited | |
| | | Percs slowly | 0.50 | Too clayey | 1.00 |
| EeD: | | | | | |
| Eastwood------------ | 90 | Very limited | | Very limited | |
| | | Slope | 1.00 | Too clayey | 1.00 |
| | | Percs slowly | 0.50 | | |
| ElA: | | | | | |
| Elrose-------------- | 85 | Not limited | | Not limited | |

Table 16.--Irrigated Domestic Grasses and Legumes for Food and Cover, and Limitations for Burrowing Mammals and Reptiles Habitat--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated domestic grasses and legumes for food and cover: Rating class and limiting features | Value | Burrowing mammals and reptiles: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| EtA: | | | | | |
| Erno | 50 | Somewhat limited | | Not limited | |
| | | Percs slowly | 0.33 | | |
| Thage | 35 | Not limited | | Not limited | |
| EyB: | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.19 | Wetness | 0.19 |
| | | | | Too clayey | 0.01 |
| GaA: | | | | | |
| Gallime | 75 | Not limited | | Not limited | |
| GaC: | | | | | |
| Gallime | 48 | Not limited | | Not limited | |
| Guyton | 42 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Too clayey | 0.01 |
| Gf: | | | | | |
| Gladewater | 90 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Percs slowly | 0.50 | Wetness | 0.17 |
| | | Wetness | 0.17 | | |
| HaA: | | | | | |
| Hainesville | 90 | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.85 | Too Sandy | 0.50 |
| | | Too sandy | 0.50 | | |
| Hb: | | | | | |
| Hannahatchee | 95 | Somewhat limited | | Very limited | |
| | | Flooding | 0.50 | Flooding | 1.00 |
| Iu: | | | | | |
| Iulus | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 0.04 | Wetness | 0.04 |
| KiC: | | | | | |
| Kirvin | 80 | Somewhat limited | | Somewhat limited | |
| | | Too gravelly, cobbly, or stony | 0.96 | Too clayey | 0.93 |
| KiD: | | | | | |
| Kirvin | 95 | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.78 | Too clayey | 0.93 |
| | | Too clayey | 0.11 | | |

Table 16.--Irrigated Domestic Grasses and Legumes for Food and Cover, and Limitations for Burrowing Mammals and Reptiles Habitat--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated domestic grasses and legumes for food and cover | | Burrowing mammals and reptiles | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| KrC: | | | | | |
| Kirvin | 80 | Not limited | | Very limited | |
| | | | | Too clayey | 1.00 |
| KuA: | | | | | |
| Kullit | 85 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.19 | Wetness | 0.19 |
| LcB: | | | | | |
| Latch | 90 | Somewhat limited | | Not limited | |
| | | Droughty | 0.32 | | |
| LmB: | | | | | |
| Latch | 60 | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.32 | Too Sandy | 0.50 |
| Mollville | 40 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | | |
| LtB: | | | | | |
| Latex | 80 | Somewhat limited | | Not limited | |
| | | Percs slowly | 0.33 | | |
| LuC: | | | | | |
| Lilbert | 80 | Somewhat limited | | Not limited | |
| | | Droughty | 0.12 | | |
| Mf: | | | | | |
| Mantachie | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 |
| MiA: | | | | | |
| Metcalf | 80 | Very limited | | Somewhat limited | |
| | | Percs slowly | 1.00 | Wetness | 0.75 |
| | | Wetness | 0.75 | Too clayey | 0.11 |
| MkA: | | | | | |
| Mollville | 80 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Too clayey | 0.01 |
| Kildare | 15 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 1.00 | | |
| | | Excess Sodium | 0.01 | | |
| MlA: | | | | | |
| Mollville | 90 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 0.33 | Too clayey | 0.01 |

Table 16.--Irrigated Domestic Grasses and Legumes for Food and Cover, and Limitations for Burrowing Mammals and Reptiles Habitat--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated domestic grasses and legumes for food and cover | | Burrowing mammals and reptiles | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Mm: | | | | | |
| Mooreville---------- | 50 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 0.44 | Wetness | 0.44 |
| Mantachie----------- | 35 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 |
| RgC: | | | | | |
| Redsprings---------- | 80 | Very limited | | Somewhat limited | |
| | | Potentially or highly erodible | 1.00 | Too clayey | 0.95 |
| | | Too gravelly, cobbly, or stony | 0.08 | | |
| RnB: | | | | | |
| Rentzel------------- | 80 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.44 | Wetness | 0.44 |
| | | Droughty | 0.06 | | |
| SaC: | | | | | |
| Sacul--------------- | 85 | Somewhat limited | | Very limited | |
| | | Percs slowly | 0.33 | Too clayey | 1.00 |
| SlC: | | | | | |
| Sailes-------------- | 85 | Not limited | | Not limited | |
| Sm: | | | | | |
| Sardis-------------- | 60 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Wetness | 0.44 | Wetness | 0.44 |
| Manco--------------- | 40 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 |
| So: | | | | | |
| Socagee------------- | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Flooding | 1.00 |
| | | | | Too clayey | 0.11 |
| TnB: | | | | | |
| Tenaha-------------- | 80 | Not limited | | Somewhat limited | |
| | | | | Too clayey | 0.01 |
| TnD: | | | | | |
| Tenaha-------------- | 80 | Very limited | | Not limited | |
| | | Slope | 1.00 | | |
| | | Droughty | 0.01 | | |

Table 16.--Irrigated Domestic Grasses and Legumes for Food and Cover, and Limitations for Burrowing Mammals and Reptiles Habitat--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated domestic grasses and legumes for food and cover | | Burrowing mammals and reptiles | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Ud: | | | | | |
| Udorthents, gravelly | 85 | Not rated | | Not limited | |
| WrA: | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Percs slowly | 1.00 | Too clayey | 0.99 |

Table 17.--Upland Native Herbaceous Plants, Shrubs, and Vines

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Upland native herbaceous plants | | Upland shrubs and vines | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | |
| Alazan | 85 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.75 | Wetness | 0.75 |
| AsA: | | | | | |
| Ashford | 90 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| | | Too clayey | 0.50 | Too clayey | 0.50 |
| BaB: | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | |
| BaD: | | | | | |
| Bernaldo | 90 | Not limited | | Not limited | |
| Bg: | | | | | |
| Bibb | 80 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| BoC: | | | | | |
| Bowie | 80 | Not limited | | Not limited | |
| BrB: | | | | | |
| Briley | 85 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| CrF: | | | | | |
| Cuthbert | 50 | Not limited | | Not limited | |
| Redsprings | 35 | Not limited | | Not limited | |
| CrG: | | | | | |
| Cuthbert | 60 | Not limited | | Not limited | |
| Redsprings | 25 | Not limited | | Not limited | |
| CtE: | | | | | |
| Cuthbert | 80 | Not limited | | Not limited | |
| CuE: | | | | | |
| Cuthbert | 80 | Not limited | | Not limited | |
| Cy: | | | | | |
| Cypress | 90 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| DaB: | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |

Table 17.--Upland Native Herbaceous Plants, Shrubs, and Vines--Continued

| Map symbol and soil name | Pct. of map unit | Upland native herbaceous plants | | Upland shrubs and vines | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| DaE: | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| DuA: | | | | | |
| Duffern | 80 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.60 | Sandy surface | 0.60 |
| EeB: | | | | | |
| Eastwood | 90 | Not limited | | Not limited | |
| EeD: | | | | | |
| Eastwood | 90 | Not limited | | Not limited | |
| ElA: | | | | | |
| Elrose | 85 | Not limited | | Not limited | |
| EtA: | | | | | |
| Erno | 50 | Not limited | | Not limited | |
| Thage | 35 | Not limited | | Not limited | |
| EyB: | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.19 | Wetness | 0.19 |
| GaA: | | | | | |
| Gallime | 75 | Not limited | | Not limited | |
| GaC: | | | | | |
| Gallime | 48 | Not limited | | Not limited | |
| Guyton | 42 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| Gf: | | | | | |
| Gladewater | 90 | Somewhat limited | | Somewhat limited | |
| | | Too clayey | 0.50 | Too clayey | 0.50 |
| | | Wetness | 0.17 | Wetness | 0.17 |
| HaA: | | | | | |
| Hainesville | 90 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.60 | Sandy surface | 0.60 |
| Hb: | | | | | |
| Hannahatchee | 95 | Not limited | | Not limited | |
| Iu: | | | | | |
| Iulus | 80 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.04 | Wetness | 0.04 |
| KiC: | | | | | |
| Kirvin | 80 | Not limited | | Not limited | |
| KiD: | | | | | |
| Kirvin | 95 | Not limited | | Not limited | |

Table 17.--Upland Native Herbaceous Plants, Shrubs, and Vines--Continued

| Map symbol and soil name | Pct. of map unit | Upland native herbaceous plants: Rating class and limiting features | Value | Upland shrubs and vines: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| KrC: | | | | | |
| Kirvin | 80 | Not limited | | Not limited | |
| KuA: | | | | | |
| Kullit | 85 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.19 | Wetness | 0.19 |
| LcB: | | | | | |
| Latch | 90 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| LmB: | | | | | |
| Latch | 60 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| Mollville | 40 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| LtB: | | | | | |
| Latex | 80 | Not limited | | Not limited | |
| LuC: | | | | | |
| Lilbert | 80 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| Mf: | | | | | |
| Mantachie | 80 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| MiA: | | | | | |
| Metcalf | 80 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.75 | Wetness | 0.75 |
| MkA: | | | | | |
| Mollville | 80 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| Kildare | 15 | Very limited | | Very limited | |
| | | Excess sodium | 1.00 | Wetness | 1.00 |
| | | Wetness | 1.00 | Excess Sodium | 0.01 |
| MlA: | | | | | |
| Mollville | 90 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| Mm: | | | | | |
| Mooreville | 50 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.44 | Wetness | 0.44 |
| Mantachie | 35 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |

Table 17.--Upland Native Herbaceous Plants, Shrubs, and Vines--Continued

| Map symbol and soil name | Pct. of map unit | Upland native herbaceous plants: Rating class and limiting features | Value | Upland shrubs and vines: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| RgC: | | | | | |
| Redsprings | 80 | Not limited | | Not limited | |
| RnB: | | | | | |
| Rentzel | 80 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.44 | Wetness | 0.44 |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| SaC: | | | | | |
| Sacul | 85 | Not limited | | Not limited | |
| SlC: | | | | | |
| Sailes | 85 | Not limited | | Not limited | |
| Sm: | | | | | |
| Sardis | 60 | Somewhat limited | | Somewhat limited | |
| | | Wetness | 0.44 | Wetness | 0.44 |
| Manco | 40 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| So: | | | | | |
| Socagee | 80 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |
| TnB: | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| TnD: | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | |
| | | Sandy surface | 0.40 | Sandy surface | 0.40 |
| Ud: | | | | | |
| Udorthents, gravelly | 85 | Not rated | | Not limited | |
| WrA: | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | |
| | | Wetness | 1.00 | Wetness | 1.00 |

Table 18.--Upland Deciduous Trees, Upland Coniferous Trees, and Upland Mixed Deciduous and Coniferous Trees

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Upland deciduous trees: Rating class and limiting features | Value | Upland coniferous trees: Rating class and limiting features | Value | Upland mixed deciduous and coniferous trees: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| AaB: | | | | | | | |
| Alazan | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.86 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | | Very limited | |
| | | | | | | Growing season wetness | 1.00 |
| BaD: | | | | | | | |
| Bernaldo | 90 | Not limited | | Not limited | | Very limited | |
| | | | | | | Growing season wetness | 1.00 |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| BoC: | | | | | | | |
| Bowie | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Depth to saturated zone | 0.22 | | | Growing season wetness | 1.00 |
| | | | | | | Depth to saturated zone | 0.22 |
| BrB: | | | | | | | |
| Briley | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.01 | Droughty | 0.01 | Droughty | 0.01 |
| CrF: | | | | | | | |
| Cuthbert | 50 | Not limited | | Not limited | | Not limited | |
| Redsprings | 35 | Not limited | | Not limited | | Not limited | |
| CrG: | | | | | | | |
| Cuthbert | 60 | Not limited | | Not limited | | Not limited | |
| Redsprings | 25 | Not limited | | Not limited | | Not limited | |

Table 18.--Upland Deciduous Trees, Upland Coniferous Trees, and Upland Mixed Deciduous and Coniferous Trees--Continued

| Map symbol and soil name | Pct. of map unit | Upland deciduous trees: Rating class and limiting features | Value | Upland coniferous trees: Rating class and limiting features | Value | Upland mixed deciduous and coniferous trees: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| CtE: | | | | | | | |
| Cuthbert | 80 | Not limited | | Not limited | | Not limited | |
| CuE: | | | | | | | |
| Cuthbert | 80 | Not limited | | Not limited | | Not limited | |
| Cy: | | | | | | | |
| Cypress | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| DaB: | | | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.32 | Droughty | 0.32 | Droughty | 0.32 |
| DaE: | | | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.32 | Droughty | 0.32 | Droughty | 0.32 |
| DuA: | | | | | | | |
| Duffern | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.90 | Droughty | 0.90 | Droughty | 0.90 |
| EeB: | | | | | | | |
| Eastwood | 90 | Not limited | | Not limited | | Not limited | |
| EeD: | | | | | | | |
| Eastwood | 90 | Not limited | | Not limited | | Not limited | |
| ElA: | | | | | | | |
| Elrose | 85 | Not limited | | Not limited | | Not limited | |
| EtA: | | | | | | | |
| Erno | 50 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 0.95 | Wetness | 0.02 | Growing season wetness | 1.00 |
| | | | | | | Depth to saturated zone | 0.95 |
| Thage | 35 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 0.99 | Wetness | 0.09 | Growing season wetness | 1.00 |
| | | | | | | Depth to saturated zone | 0.99 |
| EyB: | | | | | | | |
| Eylau | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.47 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |

Table 18.--Upland Deciduous Trees, Upland Coniferous Trees, and Upland Mixed Deciduous and Coniferous Trees--Continued

| Map symbol and soil name | Pct. of map unit | Upland deciduous trees: Rating class and limiting features | Value | Upland coniferous trees: Rating class and limiting features | Value | Upland mixed deciduous and coniferous trees: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| GaA: | | | | | | | |
| Gallime | 75 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Growing season wetness | 0.50 |
| GaC: | | | | | | | |
| Gallime | 48 | Not limited | | Not limited | | Somewhat limited | |
| | | | | | | Growing season wetness | 0.50 |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.44 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| HaA: | | | | | | | |
| Hainesville | 90 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.85 | Droughty | 0.85 | Droughty | 0.85 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Not limited | | Not limited | | Not limited | |
| Iu: | | | | | | | |
| Iulus | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.24 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| KiC: | | | | | | | |
| Kirvin | 80 | Not limited | | Not limited | | Not limited | |
| KiD: | | | | | | | |
| Kirvin | 95 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.78 | Droughty | 0.78 | Droughty | 0.78 |
| KrC: | | | | | | | |
| Kirvin | 80 | Not limited | | Not limited | | Not limited | |
| KuA: | | | | | | | |
| Kullit | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.47 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |

Table 18.--Upland Deciduous Trees, Upland Coniferous Trees, and Upland Mixed Deciduous and Coniferous Trees--Continued

| Map symbol and soil name | Pct. of map unit | Upland deciduous trees: Rating class and limiting features | Value | Upland coniferous trees: Rating class and limiting features | Value | Upland mixed deciduous and coniferous trees: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| LcB: | | | | | | | |
| Latch | 90 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 0.95 | Droughty | 0.32 | Growing season wetness | 1.00 |
| | | Droughty | 0.32 | Wetness | 0.02 | Depth to saturated zone | 0.95 |
| | | | | | | Droughty | 0.32 |
| LmB: | | | | | | | |
| Latch | 60 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 0.95 | Droughty | 0.32 | Growing season wetness | 1.00 |
| | | Droughty | 0.32 | Wetness | 0.02 | Depth to saturated zone | 0.95 |
| | | | | | | Droughty | 0.32 |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| LtB: | | | | | | | |
| Latex | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Depth to saturated zone | 0.68 | | | Growing season wetness | 1.00 |
| | | | | | | Depth to saturated zone | 0.68 |
| LuC: | | | | | | | |
| Lilbert | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.12 | Droughty | 0.12 | Droughty | 0.12 |
| Mf: | | | | | | | |
| Mantachie | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 0.50 |
| MiA: | | | | | | | |
| Metcalf | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.86 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |

Table 18.--Upland Deciduous Trees, Upland Coniferous Trees, and Upland Mixed Deciduous and Coniferous Trees--Continued

| Map symbol and soil name | Pct. of map unit | Upland deciduous trees | | Upland coniferous trees | | Upland mixed deciduous and coniferous trees | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| Mm: | | | | | | | |
| Mooreville | 50 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.68 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 0.50 |
| Mantachie | 35 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 0.50 |
| RgC: | | | | | | | |
| Redsprings | 80 | Not limited | | Not limited | | Not limited | |
| RnB: | | | | | | | |
| Rentzel | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.68 | Depth to saturated zone | 1.00 |
| | | Droughty | 0.06 | Droughty | 0.06 | Growing season wetness | 0.50 |
| | | | | | | Droughty | 0.06 |
| SaC: | | | | | | | |
| Sacul | 85 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 0.99 | Wetness | 0.09 | Growing season wetness | 1.00 |
| | | | | | | Depth to saturated zone | 0.99 |
| SlC: | | | | | | | |
| Sailes | 85 | Not limited | | Not limited | | Not limited | |

Table 18.--Upland Deciduous Trees, Upland Coniferous Trees, and Upland Mixed Deciduous and Coniferous Trees--Continued

| Map symbol and soil name | Pct. of map unit | Upland deciduous trees: Rating class and limiting features | Value | Upland coniferous trees: Rating class and limiting features | Value | Upland mixed deciduous and coniferous trees: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| Sm: | | | | | | | |
| Sardis | 60 | Very limited | | Somewhat limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 0.68 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| Manco | 40 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| So: | | | | | | | |
| Socagee | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |
| TnB: | | | | | | | |
| Tenaha | 80 | Not limited | | Not limited | | Not limited | |
| TnD: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Droughty | 0.01 | Droughty | 0.01 | Droughty | 0.01 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not rated | | Not rated | | Not rated | |
| WrA: | | | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Wetness | 1.00 | Depth to saturated zone | 1.00 |
| | | | | | | Growing season wetness | 1.00 |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants | | Riparian shrubs, vines, and trees | | Freshwater wetland plants | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Very limited | | Not limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | | | Too dry | 0.53 |
| | | Too dry | 0.53 | | | Too acid | 0.44 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Infrequent flooding | 1.00 | Ponding | 1.00 | Too acid | 1.00 |
| | | Ponding | 0.50 | | | | |
| BaB: | | | | | | | |
| Bernaldo | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |
| BaD: | | | | | | | |
| Bernaldo | 90 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |
| Bg: | | | | | | | |
| Bibb | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Long flooding | 0.50 | Flooding | 0.50 | Too acid | 0.99 |
| BoC: | | | | | | | |
| Bowie | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 0.78 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.78 |
| BrB: | | | | | | | |
| Briley | 85 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Droughty | 0.01 | Too acid | 0.44 |
| | | Too sandy | 0.50 | | | | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 1.00 |
| Redsprings | 35 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants | | Riparian shrubs, vines, and trees | | Freshwater wetland plants | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CrG: | | | | | | | |
| Cuthbert | 60 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 1.00 |
| Redsprings | 25 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.44 |
| CtE: | | | | | | | |
| Cuthbert | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 1.00 |
| CuE: | | | | | | | |
| Cuthbert | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 1.00 |
| Cy: | | | | | | | |
| Cypress | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Flooding | 1.00 | Too acid | 1.00 |
| | | Long flooding | 1.00 | Ponding | 1.00 | Ponding | 0.50 |
| DaB: | | | | | | | |
| Darco | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Droughty | 0.32 | Too acid | 0.22 |
| | | Too sandy | 0.50 | | | | |
| DaE: | | | | | | | |
| Darco | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Droughty | 0.32 | Too acid | 0.22 |
| | | Too sandy | 0.50 | | | | |
| DuA: | | | | | | | |
| Duffern | 80 | Very limited | | Very limited | | Very limited | |
| | | Too sandy | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Too dry | 1.00 | Droughty | 0.90 | Too sandy | 0.50 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |
| EeB: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.99 |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants: Rating class and limiting features | Value | Riparian shrubs, vines, and trees: Rating class and limiting features | Value | Freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.99 |
| ElA: | | | | | | | |
| Elrose | 85 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |
| EtA: | | | | | | | |
| Erno | 50 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 0.04 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.78 |
| Thage | 35 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 0.01 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.78 |
| EyB: | | | | | | | |
| Eylau | 80 | Very limited | | Not limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | | | Too dry | 0.89 |
| | | Too dry | 0.89 | | | Too acid | 0.78 |
| GaA: | | | | | | | |
| Gallime | 75 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.44 |
| GaC: | | | | | | | |
| Gallime | 48 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.04 |
| Guyton | 42 | Very limited | | Not limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.92 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Somewhat limited | |
| | | Long flooding | 1.00 | Flooding | 1.00 | Too dry | 0.91 |
| | | Too dry | 0.91 | | | Too acid | 0.22 |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants | | Riparian shrubs, vines, and trees | | Freshwater wetland plants | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| HaA: | | | | | | | |
| Hainesville--------- | 90 | Very limited | | Very limited | | Very limited | |
| | | Too sandy | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Too dry | 1.00 | Droughty | 0.85 | Too sandy | 0.50 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |
| Hb: | | | | | | | |
| Hannahatchee-------- | 95 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | | |
| Iu: | | | | | | | |
| Iulus--------------- | 80 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Too dry | 0.98 | | | Too dry | 0.98 |
| | | | | | | Too acid | 0.44 |
| KiC: | | | | | | | |
| Kirvin-------------- | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 1.00 |
| KiD: | | | | | | | |
| Kirvin-------------- | 95 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Droughty | 0.78 | Too acid | 1.00 |
| KrC: | | | | | | | |
| Kirvin-------------- | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.99 |
| KuA: | | | | | | | |
| Kullit-------------- | 85 | Very limited | | Not limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | | | Too dry | 0.89 |
| | | Too dry | 0.89 | | | Too acid | 0.78 |
| LcB: | | | | | | | |
| Latch--------------- | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Droughty | 0.32 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Too dry | 0.04 | Too acid | 0.22 |
| | | Too sandy | 0.50 | | | | |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants: Rating class and limiting features | Value | Riparian shrubs, vines, and trees: Rating class and limiting features | Value | Freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| LmB: | | | | | | | |
| Latch | 60 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Droughty | 0.32 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Too dry | 0.04 | Too acid | 0.22 |
| | | Too sandy | 0.50 | | | | |
| Mollville | 40 | Very limited | | Very limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | Ponding | 1.00 | Too acid | 0.44 |
| | | Ponding | 0.50 | | | | |
| LtB: | | | | | | | |
| Latex | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 0.32 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.92 |
| LuC: | | | | | | | |
| Lilbert | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Droughty | 0.12 | Too acid | 0.99 |
| | | Too sandy | 0.50 | | | | |
| Mf: | | | | | | | |
| Mantachie | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Long flooding | 0.50 | Flooding | 0.50 | Too acid | 0.78 |
| | | Too dry | 0.04 | | | Too dry | 0.04 |
| MiA: | | | | | | | |
| Metcalf | 80 | Very limited | | Not limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.92 |
| | | Too dry | 0.53 | | | Too dry | 0.53 |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | Ponding | 1.00 | Too acid | 0.44 |
| | | Ponding | 0.50 | | | | |
| Kildare | 15 | Very limited | | Very limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | Ponding | 1.00 | Too acid | 0.78 |
| | | Ponding | 0.50 | | | Excess sodium | 0.37 |
| | | | | | | Excess salt | 0.01 |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | Ponding | 1.00 | Too acid | 0.44 |
| | | Ponding | 0.50 | | | | |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants | | Riparian shrubs, vines, and trees | | Freshwater wetland plants | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Mm: | | | | | | | |
| Mooreville---------- | 50 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Too dry | 0.76 | | | Too acid | 0.78 |
| | | | | | | Too dry | 0.76 |
| Mantachie----------- | 35 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Long flooding | 0.50 | Flooding | 0.50 | Too acid | 0.78 |
| | | Too dry | 0.04 | | | Too dry | 0.04 |
| RgC: | | | | | | | |
| Redsprings---------- | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.22 |
| RnB: | | | | | | | |
| Rentzel------------- | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Infrequent flooding | 1.00 | Droughty | 0.06 | Too acid | 1.00 |
| | | Too dry | 0.76 | | | Too dry | 0.76 |
| | | Too sandy | 0.50 | | | | |
| SaC: | | | | | | | |
| Sacul--------------- | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 0.01 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.99 |
| SlC: | | | | | | | |
| Sailes-------------- | 85 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 0.78 |
| Sm: | | | | | | | |
| Sardis-------------- | 60 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Too dry | 0.76 | | | Too dry | 0.76 |
| | | | | | | Too acid | 0.44 |
| Manco--------------- | 40 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Long flooding | 0.50 | Flooding | 0.50 | Too acid | 1.00 |
| | | Too dry | 0.04 | | | Too dry | 0.04 |
| So: | | | | | | | |
| Socagee------------- | 80 | Not limited | | Not limited | | Very limited | |
| | | | | | | Too acid | 1.00 |
| TnB: | | | | | | | |
| Tenaha-------------- | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | | | Too acid | 1.00 |
| | | Too sandy | 0.50 | | | | |

Table 19.--Riparian Herbaceous Plants, Riparian Shrubs, Vines, and Trees, and Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Riparian herbaceous plants | | Riparian shrubs, vines, and trees | | Freshwater wetland plants | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| TnD: | | | | | | | |
| Tenaha--------------- | 80 | Very limited | | Very limited | | Very limited | |
| | | Too dry | 1.00 | Too dry | 1.00 | Too dry | 1.00 |
| | | Infrequent flooding | 1.00 | Droughty | 0.01 | Too acid | 1.00 |
| | | Too sandy | 0.50 | | | | |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not rated | | Not rated | | Very limited | |
| | | | | | | Too dry | 1.00 |
| | | | | | | Too acid | 0.22 |
| WrA: | | | | | | | |
| Wrightsville-------- | 90 | Very limited | | Very limited | | Somewhat limited | |
| | | Infrequent flooding | 1.00 | Ponding | 1.00 | Too acid | 0.99 |
| | | Ponding | 0.50 | | | Too dry | 0.01 |
| | | Too dry | 0.01 | | | | |

Table 20.--Irrigated Freshwater Wetland Plants

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| AaB: | | | |
| Alazan | 85 | Somewhat limited | |
| | | Seepage | 0.76 |
| | | Too acid | 0.44 |
| AsA: | | | |
| Ashford | 90 | Very limited | |
| | | Too acid | 1.00 |
| BaB: | | | |
| Bernaldo | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 0.76 |
| | | Too acid | 0.22 |
| BaD: | | | |
| Bernaldo | 90 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 0.76 |
| | | Slope | 0.50 |
| | | Too acid | 0.22 |
| Bg: | | | |
| Bibb | 80 | Somewhat limited | |
| | | Too acid | 0.99 |
| | | Seepage | 0.07 |
| BoC: | | | |
| Bowie | 80 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Too dry | 0.78 |
| | | Seepage | 0.76 |
| | | Slope | 0.08 |
| BrB: | | | |
| Briley | 85 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Too sandy | 0.50 |
| | | Too acid | 0.44 |
| | | Slope | 0.08 |

Table 20.--Irrigated Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| CrF: | | | |
| Cuthbert------------ | 50 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 1.00 |
| | | Slope | 1.00 |
| | | Seepage | 0.76 |
| Redsprings---------- | 35 | Very limited | |
| | | Too dry | 1.00 |
| | | Slope | 1.00 |
| | | Too acid | 0.22 |
| | | Seepage | 0.07 |
| CrG: | | | |
| Cuthbert------------ | 60 | Very limited | |
| | | Too dry | 1.00 |
| | | Slope | 1.00 |
| | | Too acid | 1.00 |
| | | Seepage | 0.76 |
| Redsprings---------- | 25 | Very limited | |
| | | Too dry | 1.00 |
| | | Slope | 1.00 |
| | | Too acid | 0.44 |
| | | Seepage | 0.07 |
| CtE: | | | |
| Cuthbert------------ | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 1.00 |
| | | Slope | 1.00 |
| | | Seepage | 0.76 |
| CuE: | | | |
| Cuthbert------------ | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 1.00 |
| | | Slope | 1.00 |
| | | Seepage | 0.76 |
| Cy: | | | |
| Cypress------------- | 90 | Very limited | |
| | | Too acid | 1.00 |
| | | Ponding | 0.50 |
| DaB: | | | |
| Darco--------------- | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Too sandy | 0.50 |
| | | Too acid | 0.22 |
| | | Slope | 0.08 |

Table 20.--Irrigated Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| DaE: | | | |
| Darco | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Slope | 1.00 |
| | | Too sandy | 0.50 |
| | | Too acid | 0.22 |
| DuA: | | | |
| Duffern | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Too sandy | 1.00 |
| | | Seepage | 1.00 |
| | | Too acid | 0.22 |
| EeB: | | | |
| Eastwood | 90 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 0.99 |
| | | Seepage | 0.07 |
| EeD: | | | |
| Eastwood | 90 | Very limited | |
| | | Too dry | 1.00 |
| | | Slope | 1.00 |
| | | Too acid | 0.99 |
| | | Seepage | 0.07 |
| ElA: | | | |
| Elrose | 85 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 0.76 |
| | | Too acid | 0.22 |
| | | Slope | 0.08 |
| EtA: | | | |
| Erno | 50 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.76 |
| | | Too dry | 0.04 |
| Thage | 35 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.76 |
| | | Too dry | 0.01 |
| EyB: | | | |
| Eylau | 80 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.76 |

Table 20.--Irrigated Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| GaA: | | | |
| Gallime | 75 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 0.76 |
| | | Too acid | 0.44 |
| GaC: | | | |
| Gallime | 48 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 0.76 |
| | | Too acid | 0.04 |
| Guyton | 42 | Somewhat limited | |
| | | Too acid | 0.92 |
| | | Seepage | 0.07 |
| Gf: | | | |
| Gladewater | 90 | Somewhat limited | |
| | | Too acid | 0.22 |
| HaA: | | | |
| Hainesville | 90 | Very limited | |
| | | Too dry | 1.00 |
| | | Too sandy | 1.00 |
| | | Seepage | 1.00 |
| | | Too acid | 0.22 |
| Hb: | | | |
| Hannahatchee | 95 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 0.76 |
| Iu: | | | |
| Iulus | 80 | Somewhat limited | |
| | | Too acid | 0.44 |
| | | Seepage | 0.07 |
| KiC: | | | |
| Kirvin | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 1.00 |
| | | Seepage | 0.76 |
| | | Slope | 0.08 |
| KiD: | | | |
| Kirvin | 95 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 1.00 |
| | | Seepage | 0.01 |
| KrC: | | | |
| Kirvin | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 0.99 |
| | | Seepage | 0.76 |

Table 20.--Irrigated Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| KuA: | | | |
| Kullit | 85 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.76 |
| LcB: | | | |
| Latch | 90 | Very limited | |
| | | Seepage | 1.00 |
| | | Too sandy | 0.50 |
| | | Too acid | 0.22 |
| | | Too dry | 0.04 |
| LmB: | | | |
| Latch | 60 | Very limited | |
| | | Seepage | 1.00 |
| | | Too sandy | 0.50 |
| | | Too acid | 0.22 |
| | | Too dry | 0.04 |
| Mollville | 40 | Somewhat limited | |
| | | Too acid | 0.44 |
| | | Seepage | 0.01 |
| LtB: | | | |
| Latex | 80 | Somewhat limited | |
| | | Too acid | 0.92 |
| | | Seepage | 0.76 |
| | | Too dry | 0.32 |
| LuC: | | | |
| Lilbert | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Too acid | 0.99 |
| | | Too sandy | 0.50 |
| | | Slope | 0.08 |
| Mf: | | | |
| Mantachie | 80 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.07 |
| MiA: | | | |
| Metcalf | 80 | Somewhat limited | |
| | | Too acid | 0.92 |
| | | Seepage | 0.07 |
| MkA: | | | |
| Mollville | 80 | Somewhat limited | |
| | | Too acid | 0.44 |
| | | Seepage | 0.01 |
| Kildare | 15 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.76 |
| | | Excess sodium | 0.37 |
| | | Excess salt | 0.01 |

Table 20.--Irrigated Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| MlA: | | | |
| Mollville----------- | 90 | Somewhat limited | |
| | | Too acid | 0.44 |
| | | Seepage | 0.01 |
| Mm: | | | |
| Mooreville---------- | 50 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.07 |
| Mantachie----------- | 35 | Somewhat limited | |
| | | Too acid | 0.78 |
| | | Seepage | 0.07 |
| RgC: | | | |
| Redsprings---------- | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 0.22 |
| | | Slope | 0.08 |
| | | Seepage | 0.07 |
| RnB: | | | |
| Rentzel------------- | 80 | Very limited | |
| | | Seepage | 1.00 |
| | | Too acid | 1.00 |
| | | Too sandy | 0.50 |
| SaC: | | | |
| Sacul--------------- | 85 | Somewhat limited | |
| | | Too acid | 0.99 |
| | | Seepage | 0.07 |
| | | Too dry | 0.01 |
| SlC: | | | |
| Sailes-------------- | 85 | Very limited | |
| | | Too dry | 1.00 |
| | | Too acid | 0.78 |
| | | Seepage | 0.07 |
| Sm: | | | |
| Sardis-------------- | 60 | Somewhat limited | |
| | | Too acid | 0.44 |
| | | Seepage | 0.07 |
| Manco--------------- | 40 | Very limited | |
| | | Too acid | 1.00 |
| | | Seepage | 0.07 |
| So: | | | |
| Socagee------------- | 80 | Very limited | |
| | | Too acid | 1.00 |
| | | Seepage | 0.07 |

Table 20.--Irrigated Freshwater Wetland Plants--Continued

| Map symbol and soil name | Pct. of map unit | Irrigated freshwater wetland plants: Rating class and limiting features | Value |
|---|---|---|---|
| TnB: | | | |
| Tenaha | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Too acid | 1.00 |
| | | Too sandy | 0.50 |
| TnD: | | | |
| Tenaha | 80 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Slope | 1.00 |
| | | Too acid | 1.00 |
| | | Too sandy | 0.50 |
| Ud: | | | |
| Udorthents, gravelly | 85 | Very limited | |
| | | Too dry | 1.00 |
| | | Seepage | 1.00 |
| | | Too acid | 0.22 |
| WrA: | | | |
| Wrightsville | 90 | Somewhat limited | |
| | | Too acid | 0.99 |
| | | Seepage | 0.01 |

Table 21.--Dwellings and Small Commercial Buildings

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Dwellings without basements | | Dwellings with basements | | Small commercial buildings | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.39 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.39 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 1.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.15 | | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Not limited | | Somewhat limited | | Somewhat limited | |
| | | | | Depth to saturated zone | 0.15 | Slope | 0.28 |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| BoC: | | | | | | | |
| Bowie | 80 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.47 | | |
| BrB: | | | | | | | |
| Briley | 85 | Not limited | | Not limited | | Not limited | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Shrink-swell | 0.50 |
| Redsprings | 35 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Shrink-swell | 0.50 |

Table 21.--Dwellings and Small Commercial Buildings-Continued

| Map symbol and soil name | Pct. of map unit | Dwellings without basements | | Dwellings with basements | | Small commercial buildings | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CrG: | | | | | | | |
| Cuthbert | 60 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Slope | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| Redsprings | 25 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Slope | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| CtE: | | | | | | | |
| Cuthbert | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Shrink-swell | 0.50 |
| CuE: | | | | | | | |
| Cuthbert | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Slope | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Shrink-swell | 0.50 |
| Cy: | | | | | | | |
| Cypress | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| DaB: | | | | | | | |
| Darco | 80 | Not limited | | Not limited | | Not limited | |
| DaE: | | | | | | | |
| Darco | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slope | 0.63 | Slope | 0.63 | Slope | 1.00 |
| DuA: | | | | | | | |
| Duffern | 80 | Not limited | | Not limited | | Not limited | |
| EeB: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Very limited | |
| | | Shrink-swell | 1.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Very limited | | Very limited | |
| | | Shrink-swell | 1.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
| | | Slope | 0.16 | Slope | 0.16 | Slope | 1.00 |
| ElA: | | | | | | | |
| Elrose | 85 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Shrink-swell | 0.50 | | |

Table 21.--Dwellings and Small Commercial Buildings-Continued

| Map symbol and soil name | Pct. of map unit | Dwellings without basements | | Dwellings with basements | | Small commercial buildings | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| EtA: | | | | | | | |
| Erno | 50 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.90 | | |
| Thage | 35 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.95 | | |
| EyB: | | | | | | | |
| Eylau | 80 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.99 | | |
| GaA: | | | | | | | |
| Gallime | 75 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Shrink-swell | 0.50 | | |
| | | | | Depth to saturated zone | 0.15 | | |
| GaC: | | | | | | | |
| Gallime | 48 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Shrink-swell | 0.50 | | |
| | | | | Depth to saturated zone | 0.15 | | |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Shrink-swell | 1.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
| | | | | Depth to saturated zone | 0.99 | | |
| HaA: | | | | | | | |
| Hainesville | 90 | Not limited | | Not limited | | Not limited | |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| Iu: | | | | | | | |
| Iulus | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | | | Depth to saturated zone | 0.99 | | |
| KiC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |

Table 21.--Dwellings and Small Commercial Buildings-Continued

| Map symbol and soil name | Pct. of map unit | Dwellings without basements: Rating class and limiting features | Value | Dwellings with basements: Rating class and limiting features | Value | Small commercial buildings: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| KiD: | | | | | | | |
| Kirvin | 95 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| KrC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| KuA: | | | | | | | |
| Kullit | 85 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.99 | | |
| LcB: | | | | | | | |
| Latch | 90 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.90 | | |
| LmB: | | | | | | | |
| Latch | 60 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.90 | | |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| LtB: | | | | | | | |
| Latex | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 1.00 | Shrink-swell | 0.50 |
| | | | | Depth to saturated zone | 0.73 | | |
| LuC: | | | | | | | |
| Lilbert | 80 | Not limited | | Not limited | | Not limited | |
| Mf: | | | | | | | |
| Mantachie | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| MiA: | | | | | | | |
| Metcalf | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.39 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.39 |
| | | | | Shrink-swell | 1.00 | | |

Table 21.--Dwellings and Small Commercial Buildings-Continued

| Map symbol and soil name | Pct. of map unit | Dwellings without basements | | Dwellings with basements | | Small commercial buildings | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| Mm: | | | | | | | |
| Mooreville | 50 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Shrink-swell | 0.50 | Depth to saturated zone | 1.00 | Shrink-swell | 0.50 |
| | | Depth to saturated zone | 0.07 | Shrink-swell | 0.50 | Depth to saturated zone | 0.07 |
| Mantachie | 35 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| RgC: | | | | | | | |
| Redsprings | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| RnB: | | | | | | | |
| Rentzel | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.07 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.07 |
| SaC: | | | | | | | |
| Sacul | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Shrink-swell | 1.00 | Depth to saturated zone | 0.95 | Shrink-swell | 1.00 |
| SlC: | | | | | | | |
| Sailes | 85 | Not limited | | Not limited | | Not limited | |

Table 21.--Dwellings and Small Commercial Buildings-Continued

| Map symbol and soil name | Pct. of map unit | Dwellings without basements | | Dwellings with basements | | Small commercial buildings | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Sm: | | | | | | | |
| Sardis | 60 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 0.07 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.07 |
| Manco | 40 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| So: | | | | | | | |
| Socagee | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| TnB: | | | | | | | |
| Tenaha | 80 | Not limited | | Not limited | | Not limited | |
| TnD: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Slope | 0.16 | Slope | 0.16 | Slope | 1.00 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not limited | | Not limited | | Not limited | |
| WrA: | | | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 1.00 | Shrink-swell | 0.50 | Shrink-swell | 1.00 |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Local roads and streets | | Shallow excavations | | Lawns and landscaping | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Very limited | | Very limited | | Somewhat limited | |
| | | Low strength | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.19 |
| | | Depth to saturated zone | 0.19 | Cutbanks cave | 0.10 | | |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Shrink-swell | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Low strength | 1.00 | Cutbanks cave | 1.00 | | |
| BaB: | | | | | | | |
| Bernaldo | 80 | Very limited | | Somewhat limited | | Not limited | |
| | | Low strength | 1.00 | Depth to saturated zone | 0.15 | | |
| | | | | Cutbanks cave | 0.10 | | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Very limited | | Somewhat limited | | Not limited | |
| | | Low strength | 1.00 | Depth to saturated zone | 0.15 | | |
| | | | | Cutbanks cave | 0.10 | | |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.80 | Depth to saturated zone | 1.00 |
| | | | | Cutbanks cave | 0.10 | | |
| BoC: | | | | | | | |
| Bowie | 80 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.47 | | |
| | | | | Cutbanks cave | 0.10 | | |
| BrB: | | | | | | | |
| Briley | 85 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.02 |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets: Rating class and limiting features | Value | Shallow excavations: Rating class and limiting features | Value | Lawns and landscaping: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| CrF: | | | | | | | |
| Cuthbert------------ | 50 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Low strength | 1.00 | Too clayey | 0.28 | Slope | 0.16 |
| | | Shrink-swell | 0.50 | Slope | 0.16 | | |
| | | Slope | 0.16 | Cutbanks cave | 0.10 | | |
| Redsprings---------- | 35 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Too clayey | 0.28 | Slope | 0.16 |
| | | Slope | 0.16 | Slope | 0.16 | Gravel content | 0.01 |
| | | Low strength | 0.10 | Cutbanks cave | 0.10 | | |
| CrG: | | | | | | | |
| Cuthbert------------ | 60 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Too steep | 1.00 |
| | | Shrink-swell | 0.50 | Too clayey | 0.28 | Gravel content | 0.73 |
| | | | | Cutbanks cave | 0.10 | Large stones content | 0.01 |
| Redsprings---------- | 25 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Too steep | 1.00 |
| | | Shrink-swell | 0.50 | Too clayey | 0.28 | Gravel content | 0.01 |
| | | Low strength | 0.10 | Cutbanks cave | 0.10 | | |
| CtE: | | | | | | | |
| Cuthbert------------ | 80 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Low strength | 1.00 | Too clayey | 0.28 | Slope | 0.16 |
| | | Shrink-swell | 0.50 | Slope | 0.16 | | |
| | | Slope | 0.16 | Cutbanks cave | 0.10 | | |
| CuE: | | | | | | | |
| Cuthbert------------ | 80 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Low strength | 1.00 | Too clayey | 0.28 | Gravel content | 0.73 |
| | | Shrink-swell | 0.50 | Slope | 0.16 | Slope | 0.16 |
| | | Slope | 0.16 | Cutbanks cave | 0.10 | Large stones content | 0.01 |
| Cy: | | | | | | | |
| Cypress------------- | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.80 | Depth to saturated zone | 1.00 |
| | | Low strength | 1.00 | Cutbanks cave | 0.10 | | |
| | | Shrink-swell | 0.50 | | | | |
| DaB: | | | | | | | |
| Darco--------------- | 80 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.34 |
| DaE: | | | | | | | |
| Darco--------------- | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Slope | 0.63 | Cutbanks cave | 1.00 | Slope | 0.63 |
| | | | | Slope | 0.63 | Droughty | 0.34 |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets | | Shallow excavations | | Lawns and landscaping | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| DuA: | | | | | | | |
| Duffern | 80 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.91 |
| EeB: | | | | | | | |
| Eastwood | 90 | Very limited | | Somewhat limited | | Not limited | |
| | | Low strength | 1.00 | Too clayey | 0.72 | | |
| | | Shrink-swell | 1.00 | Cutbanks cave | 0.10 | | |
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Low strength | 1.00 | Too clayey | 0.72 | Slope | 0.16 |
| | | Shrink-swell | 1.00 | Slope | 0.16 | | |
| | | Slope | 0.16 | Cutbanks cave | 0.10 | | |
| ElA: | | | | | | | |
| Elrose | 85 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Cutbanks cave | 0.10 | | |
| EtA: | | | | | | | |
| Erno | 50 | Somewhat limited | | Somewhat limited | | Not limited | |
| | | Low strength | 0.22 | Depth to saturated zone | 0.90 | | |
| | | | | Cutbanks cave | 0.10 | | |
| Thage | 35 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.95 | | |
| | | | | Cutbanks cave | 0.10 | | |
| EyB: | | | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | | Not limited | |
| | | Low strength | 0.22 | Depth to saturated zone | 0.99 | | |
| | | | | Cutbanks cave | 0.10 | | |
| GaA: | | | | | | | |
| Gallime | 75 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.15 | | |
| | | | | Cutbanks cave | 0.10 | | |
| GaC: | | | | | | | |
| Gallime | 48 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Depth to saturated zone | 0.15 | | |
| | | | | Cutbanks cave | 0.10 | | |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Low strength | 1.00 | Cutbanks cave | 0.10 | | |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets: Rating class and limiting features | Value | Shallow excavations: Rating class and limiting features | Value | Lawns and landscaping: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Very limited | |
| | | Shrink-swell | 1.00 | Too clayey | 1.00 | Too clayey | 1.00 |
| | | Flooding | 1.00 | Cutbanks cave | 1.00 | Flooding | 1.00 |
| | | Low strength | 1.00 | Depth to saturated zone | 0.99 | | |
| | | | | Flooding | 0.80 | | |
| HaA: | | | | | | | |
| Hainesville | 90 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.85 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Flooding | 1.00 | Flooding | 0.60 | Flooding | 0.60 |
| | | | | Cutbanks cave | 0.10 | | |
| Iu: | | | | | | | |
| Iulus | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Flooding | 1.00 | Depth to saturated zone | 0.99 | Flooding | 1.00 |
| | | | | Flooding | 0.80 | | |
| | | | | Cutbanks cave | 0.10 | | |
| KiC: | | | | | | | |
| Kirvin | 80 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Low strength | 1.00 | Too clayey | 0.28 | Gravel content | 0.87 |
| | | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | | |
| KiD: | | | | | | | |
| Kirvin | 95 | Very limited | | Somewhat limited | | Somewhat limited | |
| | | Low strength | 1.00 | Cutbanks cave | 0.10 | Droughty | 0.79 |
| | | Shrink-swell | 0.50 | | | | |
| KrC: | | | | | | | |
| Kirvin | 80 | Very limited | | Somewhat limited | | Not limited | |
| | | Low strength | 1.00 | Too clayey | 0.28 | | |
| | | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | | |
| KuA: | | | | | | | |
| Kullit | 85 | Very limited | | Somewhat limited | | Not limited | |
| | | Low strength | 1.00 | Depth to saturated zone | 0.99 | | |
| | | | | Cutbanks cave | 0.10 | | |
| | | | | Too clayey | 0.03 | | |
| LcB: | | | | | | | |
| Latch | 90 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.34 |
| | | | | Depth to saturated zone | 0.90 | | |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets | | Shallow excavations | | Lawns and landscaping | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| LmB: | | | | | | | |
| Latch | 60 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.34 |
| | | | | Depth to saturated zone | 0.90 | | |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Low strength | 0.78 | Cutbanks cave | 0.10 | | |
| | | Shrink-swell | 0.50 | | | | |
| LtB: | | | | | | | |
| Latex | 80 | Somewhat limited | | Somewhat limited | | Not limited | |
| | | Low strength | 0.78 | Depth to saturated zone | 0.73 | | |
| | | Shrink-swell | 0.50 | Too clayey | 0.12 | | |
| | | | | Cutbanks cave | 0.10 | | |
| LuC: | | | | | | | |
| Lilbert | 80 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.13 |
| Mf: | | | | | | | |
| Mantachie | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 0.94 | Flooding | 0.80 | Depth to saturated zone | 0.94 |
| | | | | Cutbanks cave | 0.10 | | |
| MiA: | | | | | | | |
| Metcalf | 80 | Very limited | | Very limited | | Somewhat limited | |
| | | Low strength | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.19 |
| | | Depth to saturated zone | 0.19 | Too clayey | 0.80 | | |
| | | | | Cutbanks cave | 0.10 | | |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Cutbanks cave | 1.00 | | |
| | | Low strength | 0.22 | | | | |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Sodium content | 1.00 |
| | | | | Cutbanks cave | 1.00 | Depth to saturated zone | 1.00 |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets | | Shallow excavations | | Lawns and landscaping | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | | |
| | | Low strength | 0.22 | | | | |
| Mm: | | | | | | | |
| Mooreville | 50 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Low strength | 1.00 | Flooding | 0.80 | Depth to saturated zone | 0.03 |
| | | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | | |
| | | Depth to saturated zone | 0.03 | | | | |
| Mantachie | 35 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 0.94 | Flooding | 0.80 | Depth to saturated zone | 0.94 |
| | | Low strength | 0.22 | Cutbanks cave | 0.10 | | |
| RgC: | | | | | | | |
| Redsprings | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | Gravel content | 0.01 |
| | | Low strength | 0.10 | | | | |
| RnB: | | | | | | | |
| Rentzel | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.03 | Depth to saturated zone | 1.00 | Droughty | 0.07 |
| | | | | Cutbanks cave | 1.00 | Depth to saturated zone | 0.03 |
| SaC: | | | | | | | |
| Sacul | 85 | Very limited | | Somewhat limited | | Not limited | |
| | | Shrink-swell | 1.00 | Depth to saturated zone | 0.95 | | |
| | | Low strength | 1.00 | Too clayey | 0.28 | | |
| | | | | Cutbanks cave | 0.10 | | |
| SlC: | | | | | | | |
| Sailes | 85 | Not limited | | Somewhat limited | | Not limited | |
| | | | | Cutbanks cave | 0.10 | | |

Table 22.--Roads and Streets, Shallow Excavations, and Lawns and Landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets | | Shallow excavations | | Lawns and landscaping | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Sm: | | | | | | | |
| Sardis | 60 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Low strength | 1.00 | Flooding | 0.80 | Depth to saturated zone | 0.03 |
| | | Depth to saturated zone | 0.03 | Cutbanks cave | 0.10 | | |
| Manco | 40 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Low strength | 1.00 | Flooding | 0.80 | Depth to saturated zone | 0.94 |
| | | Depth to saturated zone | 0.94 | Cutbanks cave | 0.10 | | |
| So: | | | | | | | |
| Socagee | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
| | | Flooding | 1.00 | Flooding | 0.80 | Depth to saturated zone | 1.00 |
| | | Low strength | 1.00 | Cutbanks cave | 0.10 | | |
| | | Shrink-swell | 0.50 | | | | |
| TnB: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Low strength | 0.22 | Cutbanks cave | 1.00 | Droughty | 0.01 |
| TnD: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Slope | 0.16 | Cutbanks cave | 1.00 | Slope | 0.16 |
| | | | | Slope | 0.16 | Droughty | 0.01 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Not limited | | Very limited | | Somewhat limited | |
| | | | | Cutbanks cave | 1.00 | Droughty | 0.69 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | | Very limited | |
| | | Ponding | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Low strength | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.99 |
| | | Shrink-swell | 1.00 | Cutbanks cave | 0.10 | | |
| | | Depth to saturated zone | 0.99 | | | | |

Table 23.--Sewage Disposal

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields | | Sewage lagoons | |
|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | |
| Alazan | 85 | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.50 | Seepage | 0.50 |
| AsA: | | | | | |
| Ashford | 90 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |
| BaB: | | | | | |
| Bernaldo | 80 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | Depth to saturated zone | 0.40 | | |
| BaD: | | | | | |
| Bernaldo | 90 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | Depth to saturated zone | 0.40 | Slope | 0.82 |
| Bg: | | | | | |
| Bibb | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.50 | Seepage | 0.50 |
| BoC: | | | | | |
| Bowie | 80 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Seepage | 0.50 |
| | | Depth to saturated zone | 0.94 | Slope | 0.32 |
| BrB: | | | | | |
| Briley | 85 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | | | Slope | 0.32 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| CrF: | | | | | |
| Cuthbert | 50 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Seepage | 1.00 |
| | | Slope | 0.16 | Slope | 1.00 |
| Redsprings | 35 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slope | 1.00 |
| | | Slope | 0.16 | | |
| CrG: | | | | | |
| Cuthbert | 60 | Very limited | | Very limited | |
| | | Too steep | 1.00 | Slope | 1.00 |
| | | Slow water movement | 1.00 | Seepage | 1.00 |
| Redsprings | 25 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slope | 1.00 |
| | | Too steep | 1.00 | | |
| CtE: | | | | | |
| Cuthbert | 80 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slope | 1.00 |
| | | Slope | 0.16 | | |
| CuE: | | | | | |
| Cuthbert | 80 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slope | 1.00 |
| | | Slope | 0.16 | | |
| Cy: | | | | | |
| Cypress | 90 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Ponding | 1.00 |
| | | Slow water movement | 1.00 | Flooding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |
| DaB: | | | | | |
| Darco | 80 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | | | Slope | 0.32 |
| DaE: | | | | | |
| Darco | 80 | Somewhat limited | | Very limited | |
| | | Slope | 0.63 | Slope | 1.00 |
| | | Slow water movement | 0.50 | Seepage | 1.00 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| DuA: | | | | | |
| Duffern | 80 | Very limited | | Very limited | |
| | | Seepage, bottom layer | 1.00 | Seepage | 1.00 |
| | | Filtering capacity | 1.00 | Slope | 0.08 |
| EeB: | | | | | |
| Eastwood | 90 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Slope | 0.08 |
| EeD: | | | | | |
| Eastwood | 90 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Slope | 1.00 |
| | | Slope | 0.16 | | |
| ElA: | | | | | |
| Elrose | 85 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | | | Slope | 0.32 |
| EtA: | | | | | |
| Erno | 50 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Seepage | 0.50 |
| | | Depth to saturated zone | 1.00 | | |
| Thage | 35 | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 1.00 | Seepage | 0.50 |
| | | Slow water movement | 1.00 | | |
| EyB: | | | | | |
| Eylau | 80 | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Seepage | 1.00 |
| | | Slow water movement | 1.00 | Depth to saturated zone | 0.19 |
| GaA: | | | | | |
| Gallime | 75 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | Depth to saturated zone | 0.40 | Slope | 0.08 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| GaC: | | | | | |
| Gallime | 48 | Somewhat limited | | Very limited | |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| | | Depth to saturated zone | 0.40 | | |
| Guyton | 42 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |
| Gf: | | | | | |
| Gladewater | 90 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Slow water movement | 1.00 | Depth to saturated zone | 0.17 |
| | | Depth to saturated zone | 1.00 | | |
| HaA: | | | | | |
| Hainesville | 90 | Very limited | | Very limited | |
| | | Seepage, bottom layer | 1.00 | Seepage | 1.00 |
| | | Filtering capacity | 1.00 | | |
| Hb: | | | | | |
| Hannahatchee | 95 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Slow water movement | 0.50 | Seepage | 1.00 |
| Iu: | | | | | |
| Iulus | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Seepage | 0.50 |
| | | Slow water movement | 0.50 | Depth to saturated zone | 0.04 |
| KiC: | | | | | |
| Kirvin | 80 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Slope | 0.32 |
| KiD: | | | | | |
| Kirvin | 95 | Not limited | | Somewhat limited | |
| | | | | Slope | 0.08 |
| KrC: | | | | | |
| Kirvin | 80 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Slope | 0.08 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| KuA: | | | | | |
| Kullit | 85 | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 1.00 | Seepage | 1.00 |
| LcB: | | | | | |
| Latch | 90 | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Seepage | 1.00 |
| | | Seepage, bottom layer | 1.00 | | |
| | | Slow water movement | 0.50 | | |
| LmB: | | | | | |
| Latch | 60 | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Seepage | 1.00 |
| | | Slow water movement | 0.50 | | |
| Mollville | 40 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |
| | | Seepage, bottom layer | 1.00 | | |
| LtB: | | | | | |
| Latex | 80 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Seepage | 0.50 |
| | | Depth to saturated zone | 1.00 | | |
| LuC: | | | | | |
| Lilbert | 80 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Seepage | 1.00 |
| | | | | Slope | 0.32 |
| Mf: | | | | | |
| Mantachie | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.46 | Seepage | 0.53 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| MiA: | | | | | |
| Metcalf | 80 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Depth to saturated zone | 0.75 |
| | | Depth to saturated zone | 1.00 | | |
| MkA: | | | | | |
| Mollville | 80 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |
| | | Seepage, bottom layer | 1.00 | | |
| Kildare | 15 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | Seepage | 1.00 |
| | | Seepage, bottom layer | 1.00 | | |
| MlA: | | | | | |
| Mollville | 90 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |
| | | Seepage, bottom layer | 1.00 | | |
| Mm: | | | | | |
| Mooreville | 50 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.50 | Seepage | 0.50 |
| Mantachie | 35 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.46 | Seepage | 0.53 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| RgC: | | | | | |
| Redsprings | 80 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Slope | 0.32 |
| RnB: | | | | | |
| Rentzel | 80 | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Seepage | 1.00 |
| | | Slow water movement | 1.00 | Depth to saturated zone | 0.44 |
| SaC: | | | | | |
| Sacul | 85 | Very limited | | Somewhat limited | |
| | | Slow water movement | 1.00 | Seepage | 0.50 |
| | | Depth to saturated zone | 1.00 | Slope | 0.08 |
| SlC: | | | | | |
| Sailes | 85 | Somewhat limited | | Somewhat limited | |
| | | Slow water movement | 0.46 | Seepage | 0.53 |
| | | | | Slope | 0.08 |
| Sm: | | | | | |
| Sardis | 60 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Seepage | 0.50 |
| | | Slow water movement | 0.50 | Depth to saturated zone | 0.44 |
| Manco | 40 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 0.50 | Seepage | 0.50 |
| So: | | | | | |
| Socagee | 80 | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Slow water movement | 1.00 | | |
| TnB: | | | | | |
| Tenaha | 80 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Seepage | 1.00 |
| | | | | Slope | 0.08 |

Table 23.--Sewage Disposal--Continued

| Map symbol and soil name | Pct. of map unit | Septic tank absorption fields: Rating class and limiting features | Value | Sewage lagoons: Rating class and limiting features | Value |
|---|---|---|---|---|---|
| TnD: | | | | | |
| Tenaha | 80 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Seepage | 1.00 |
| | | Slope | 0.16 | Slope | 1.00 |
| Ud: | | | | | |
| Udorthents, gravelly | 85 | Very limited | | Very limited | |
| | | Filtering capacity | 1.00 | Seepage | 1.00 |
| | | Seepage, bottom layer | 1.00 | | |
| WrA: | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | |
| | | Slow water movement | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | | |

Table 24.--Landfills

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill | | Area sanitary landfill | | Daily cover for landfill | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Very limited | | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.86 |
| | | Too clayey | 0.50 | | | Too clayey | 0.50 |
| AsA: | | | | | | | |
| Ashford | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Too clayey | 1.00 | | | Too clayey | 1.00 |
| | | | | | | Hard to compact | 1.00 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Not limited | | Not limited | | Not limited | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Not limited | | Not limited | | Not limited | |
| Bg: | | | | | | | |
| Bibb | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | | |
| BoC: | | | | | | | |
| Bowie | 80 | Not limited | | Not limited | | Not limited | |
| BrB: | | | | | | | |
| Briley | 85 | Not limited | | Very limited | | Not limited | |
| | | | | Seepage | 1.00 | | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slope | 0.16 | Slope | 0.16 | Slope | 0.16 |
| Redsprings | 35 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Too clayey | 0.50 | Slope | 0.16 | Too clayey | 0.50 |
| | | Slope | 0.16 | | | Hard to compact | 0.50 |
| | | | | | | Slope | 0.16 |
| CrG: | | | | | | | |
| Cuthbert | 60 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Too steep | 1.00 |
| Redsprings | 25 | Very limited | | Very limited | | Very limited | |
| | | Too steep | 1.00 | Too steep | 1.00 | Too steep | 1.00 |
| | | | | | | Too clayey | 0.50 |

Table 24.--Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill | | Area sanitary landfill | | Daily cover for landfill | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CtE: | | | | | | | |
| Cuthbert | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slope | 0.16 | Slope | 0.16 | Slope | 0.16 |
| CuE: | | | | | | | |
| Cuthbert | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Slope | 0.16 | Slope | 0.16 | Slope | 0.16 |
| Cy: | | | | | | | |
| Cypress | 90 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Ponding | 1.00 |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Depth to saturated zone | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Too clayey | 0.50 |
| | | Too clayey | 0.50 | | | | |
| DaB: | | | | | | | |
| Darco | 80 | Very limited | | Very limited | | Very limited | |
| | | Too sandy | 1.00 | Seepage | 1.00 | Too sandy | 1.00 |
| | | | | | | Seepage | 1.00 |
| DaE: | | | | | | | |
| Darco | 80 | Somewhat limited | | Very limited | | Very limited | |
| | | Slope | 0.63 | Seepage | 1.00 | Seepage | 1.00 |
| | | Too sandy | 0.50 | Slope | 0.63 | Slope | 0.63 |
| | | | | | | Too sandy | 0.50 |
| DuA: | | | | | | | |
| Duffern | 80 | Very limited | | Very limited | | Very limited | |
| | | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Too sandy | 1.00 |
| | | Too sandy | 1.00 | | | Seepage | 1.00 |
| EeB: | | | | | | | |
| Eastwood | 90 | Very limited | | Not limited | | Very limited | |
| | | Too clayey | 1.00 | | | Too clayey | 1.00 |
| | | | | | | Hard to compact | 1.00 |
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Too clayey | 1.00 | Slope | 0.16 | Too clayey | 1.00 |
| | | Slope | 0.16 | | | Hard to compact | 1.00 |
| | | | | | | Slope | 0.16 |
| ElA: | | | | | | | |
| Elrose | 85 | Somewhat limited | | Not limited | | Not limited | |
| | | Too clayey | 0.50 | | | | |

Table 24.--Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill | | Area sanitary landfill | | Daily cover for landfill | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| EtA: | | | | | | | |
| Erno | 50 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.24 | | | Depth to saturated zone | 0.02 |
| Thage | 35 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Too clayey | 0.50 | | | Too clayey | 0.50 |
| | | Depth to saturated zone | 0.44 | | | Depth to saturated zone | 0.09 |
| EyB: | | | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Depth to saturated zone | 0.86 | Depth to saturated zone | 0.19 | Too clayey | 0.50 |
| | | Too clayey | 0.50 | | | Depth to saturated zone | 0.47 |
| GaA: | | | | | | | |
| Gallime | 75 | Not limited | | Very limited | | Not limited | |
| | | | | Seepage | 1.00 | | |
| GaC: | | | | | | | |
| Gallime | 48 | Not limited | | Very limited | | Not limited | |
| | | | | Seepage | 1.00 | | |
| Guyton | 42 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Too clayey | 0.50 | | | Too clayey | 0.50 |
| Gf: | | | | | | | |
| Gladewater | 90 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Too clayey | 1.00 |
| | | Too clayey | 1.00 | Depth to saturated zone | 0.17 | Hard to compact | 1.00 |
| | | Depth to saturated zone | 0.84 | | | Depth to saturated zone | 0.44 |
| HaA: | | | | | | | |
| Hainesville | 90 | Very limited | | Very limited | | Very limited | |
| | | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Too sandy | 1.00 |
| | | Too sandy | 1.00 | | | Seepage | 1.00 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Very limited | | Very limited | | Not limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | | |
| Iu: | | | | | | | |
| Iulus | 80 | Very limited | | Very limited | | Somewhat limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 0.24 |
| | | Depth to saturated zone | 0.68 | Depth to saturated zone | 0.04 | | |

Table 24.--Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill | | Area sanitary landfill | | Daily cover for landfill | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| KiC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Not limited | | Somewhat limited | |
| | | Too clayey | 0.50 | | | Too clayey | 0.50 |
| KiD: | | | | | | | |
| Kirvin | 95 | Not limited | | Not limited | | Not limited | |
| KrC: | | | | | | | |
| Kirvin | 80 | Very limited | | Not limited | | Very limited | |
| | | Too clayey | 1.00 | | | Too clayey | 1.00 |
| | | | | | | Hard to compact | 1.00 |
| KuA: | | | | | | | |
| Kullit | 85 | Very limited | | Very limited | | Somewhat limited | |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Too clayey | 0.50 |
| | | Too clayey | 0.50 | | | Depth to saturated zone | 0.47 |
| LcB: | | | | | | | |
| Latch | 90 | Very limited | | Very limited | | Very limited | |
| | | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Seepage | 1.00 |
| | | Too sandy | 0.50 | | | Too sandy | 0.50 |
| | | Depth to saturated zone | 0.24 | | | Depth to saturated zone | 0.02 |
| LmB: | | | | | | | |
| Latch | 60 | Very limited | | Very limited | | Very limited | |
| | | Too sandy | 1.00 | Seepage | 1.00 | Too sandy | 1.00 |
| | | Depth to saturated zone | 0.24 | | | Seepage | 1.00 |
| | | | | | | Depth to saturated zone | 0.02 |
| Mollville | 40 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Seepage, bottom layer | 1.00 | | | | |
| LtB: | | | | | | | |
| Latex | 80 | Very limited | | Not limited | | Very limited | |
| | | Too clayey | 1.00 | | | Too clayey | 1.00 |
| | | Depth to saturated zone | 0.02 | | | Hard to compact | 1.00 |
| LuC: | | | | | | | |
| Lilbert | 80 | Not limited | | Very limited | | Not limited | |
| | | | | Seepage | 1.00 | | |

Table 24.--Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill | | Area sanitary landfill | | Daily cover for landfill | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Mf: | | | | | | | |
| Mantachie | 80 | Very limited | | Very limited | | Very limited | |
| | | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 1.00 |
| | | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | | |
| MiA: | | | | | | | |
| Metcalf | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Too clayey | 1.00 | Depth to saturated zone | 0.75 | Too clayey | 1.00 |
| | | Depth to saturated zone | 0.99 | | | Hard to compact | 1.00 |
| | | | | | | Depth to saturated zone | 0.86 |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Seepage, bottom layer | 1.00 | | | Too clayey | 0.50 |
| | | Too clayey | 0.50 | | | | |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Excess sodium | 1.00 | | | Sodium content | 1.00 |
| | | Seepage, bottom layer | 1.00 | | | Seepage | 0.50 |
| | | Too sandy | 0.50 | | | Too sandy | 0.50 |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Seepage, bottom layer | 1.00 | | | Too clayey | 0.50 |
| | | Too clayey | 0.50 | | | | |

Table 24.--Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
|---|---|---|---|---|---|---|---|
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Mm: |  |  |  |  |  |  |  |
| Mooreville | 50 | Very limited |  | Very limited |  | Somewhat limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 0.68 |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |  |  |
| Mantachie | 35 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 1.00 |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Too clayey | 0.50 |
|  |  | Too clayey | 0.50 |  |  |  |  |
| RgC: |  |  |  |  |  |  |  |
| Redsprings | 80 | Somewhat limited |  | Not limited |  | Somewhat limited |  |
|  |  | Too clayey | 0.50 |  |  | Hard to compact | 0.50 |
| RnB: |  |  |  |  |  |  |  |
| Rentzel | 80 | Somewhat limited |  | Very limited |  | Somewhat limited |  |
|  |  | Depth to saturated zone | 0.95 | Seepage | 1.00 | Depth to saturated zone | 0.68 |
|  |  |  |  | Depth to saturated zone | 0.44 |  |  |
| SaC: |  |  |  |  |  |  |  |
| Sacul | 85 | Somewhat limited |  | Not limited |  | Very limited |  |
|  |  | Depth to saturated zone | 0.44 |  |  | Too clayey | 1.00 |
|  |  |  |  |  |  | Depth to saturated zone | 0.09 |
| SlC: |  |  |  |  |  |  |  |
| Sailes | 85 | Not limited |  | Not limited |  | Not limited |  |
| Sm: |  |  |  |  |  |  |  |
| Sardis | 60 | Very limited |  | Very limited |  | Somewhat limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 0.68 |
|  |  | Depth to saturated zone | 0.95 | Depth to saturated zone | 0.44 |  |  |
| Manco | 40 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 1.00 |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |  |  |
| So: |  |  |  |  |  |  |  |
| Socagee | 80 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 1.00 |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Too clayey | 0.50 |
|  |  | Too clayey | 0.50 |  |  |  |  |

Table 24.--Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill | | Area sanitary landfill | | Daily cover for landfill | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| TnB: | | | | | | | |
| Tenaha | 80 | Not limited | | Very limited | | Not limited | |
| | | | | Seepage | 1.00 | | |
| TnD: | | | | | | | |
| Tenaha | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Slope | 0.16 | Seepage | 1.00 | Slope | 0.16 |
| | | | | Slope | 0.16 | | |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Very limited | | Very limited | | Very limited | |
| | | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Seepage | 1.00 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Very limited | | Very limited | | Very limited | |
| | | Depth to saturated zone | 1.00 | Ponding | 1.00 | Ponding | 1.00 |
| | | Ponding | 1.00 | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 |
| | | Too clayey | 0.50 | | | Too clayey | 0.50 |

Table 25.--Source of Gravel and Sand

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|---|---|---|---|---|---|
| | | Rating class | Value | Rating class | Value |
| AaB: | | | | | |
| Alazan | 85 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| AsA: | | | | | |
| Ashford | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| BaB: | | | | | |
| Bernaldo | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.01 |
| BaD: | | | | | |
| Bernaldo | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Bg: | | | | | |
| Bibb | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| BoC: | | | | | |
| Bowie | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| BrB: | | | | | |
| Briley | 85 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.07 |
| CrF: | | | | | |
| Cuthbert | 50 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Redsprings | 35 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 25.--Source of Gravel and Sand--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of gravel: Rating class | Value | Potential source of sand: Rating class | Value |
|---|---|---|---|---|---|
| CrG: | | | | | |
| Cuthbert | 60 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Redsprings | 25 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| CtE: | | | | | |
| Cuthbert | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| CuE: | | | | | |
| Cuthbert | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Cy: | | | | | |
| Cypress | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| DaB: | | | | | |
| Darco | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.13 |
| DaE: | | | | | |
| Darco | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.05 |
| DuA: | | | | | |
| Duffern | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.12 |
| | | Thickest layer | 0.00 | Thickest layer | 0.22 |
| EeB: | | | | | |
| Eastwood | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| EeD: | | | | | |
| Eastwood | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| ElA: | | | | | |
| Elrose | 85 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 25.--Source of Gravel and Sand--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of gravel: Rating class | Value | Potential source of sand: Rating class | Value |
|---|---|---|---|---|---|
| EtA: | | | | | |
| Erno | 50 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Thage | 35 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| EyB: | | | | | |
| Eylau | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| GaA: | | | | | |
| Gallime | 75 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| GaC: | | | | | |
| Gallime | 48 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Guyton | 42 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Gf: | | | | | |
| Gladewater | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| HaA: | | | | | |
| Hainesville | 90 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.13 |
| | | Thickest layer | 0.00 | Thickest layer | 0.34 |
| Hb: | | | | | |
| Hannahatchee | 95 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Iu: | | | | | |
| Iulus | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.02 |
| KiC: | | | | | |
| Kirvin | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| KiD: | | | | | |
| Kirvin | 95 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 25.--Source of Gravel and Sand--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of gravel: Rating class | Potential source of gravel: Value | Potential source of sand: Rating class | Potential source of sand: Value |
|---|---|---|---|---|---|
| KrC: | | | | | |
| Kirvin | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| KuA: | | | | | |
| Kullit | 85 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| LcB: | | | | | |
| Latch | 90 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.02 |
| | | Thickest layer | 0.00 | Thickest layer | 0.06 |
| LmB: | | | | | |
| Latch | 60 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.13 |
| Mollville | 40 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.01 |
| LtB: | | | | | |
| Latex | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| LuC: | | | | | |
| Lilbert | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.05 |
| Mf: | | | | | |
| Mantachie | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| MiA: | | | | | |
| Metcalf | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| MkA: | | | | | |
| Mollville | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.06 |
| Kildare | 15 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.06 |
| MlA: | | | | | |
| Mollville | 90 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.01 |

Table 25.--Source of Gravel and Sand--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of gravel: Rating class | Value | Potential source of sand: Rating class | Value |
|---|---|---|---|---|---|
| Mm: | | | | | |
| Mooreville | 50 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.01 |
| Mantachie | 35 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| RgC: | | | | | |
| Redsprings | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| RnB: | | | | | |
| Rentzel | 80 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.06 |
| SaC: | | | | | |
| Sacul | 85 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| SlC: | | | | | |
| Sailes | 85 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Sm: | | | | | |
| Sardis | 60 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Thickest layer | 0.00 |
| | | Thickest layer | 0.00 | Bottom layer | 0.03 |
| Manco | 40 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| So: | | | | | |
| Socagee | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| TnB: | | | | | |
| Tenaha | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| TnD: | | | | | |
| Tenaha | 80 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Ud: | | | | | |
| Udorthents, gravelly | 85 | Poor | | Fair | |
| | | Bottom layer | 0.00 | Bottom layer | 0.01 |
| | | Thickest layer | 0.00 | Thickest layer | 0.01 |

Table 25.--Source of Gravel and Sand--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|---|---|---|---|---|---|
| | | Rating class | Value | Rating class | Value |
| WrA: | | | | | |
| Wrightsville-------- | 90 | Poor | | Poor | |
| | | Bottom layer | 0.00 | Bottom layer | 0.00 |
| | | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Fair | | Poor | | Fair | |
| | | Too acid | 0.54 | Low strength | 0.00 | Wetness depth | 0.53 |
| | | Organic matter content low | 0.60 | Wetness depth | 0.53 | | |
| | | Water erosion | 0.99 | | | | |
| AsA: | | | | | | | |
| Ashford | 90 | Poor | | Poor | | Poor | |
| | | Too clayey | 0.00 | Wetness depth | 0.00 | Too clayey | 0.00 |
| | | Too acid | 0.03 | Shrink-swell | 0.00 | Wetness depth | 0.00 |
| | | | | Low strength | 0.00 | Too acid | 0.32 |
| BaB: | | | | | | | |
| Bernaldo | 80 | Fair | | Good | | Good | |
| | | Organic matter content low | 0.60 | | | | |
| | | Too acid | 0.68 | | | | |
| BaD: | | | | | | | |
| Bernaldo | 90 | Fair | | Good | | Good | |
| | | Organic matter content low | 0.60 | | | | |
| | | Too acid | 0.68 | | | | |
| Bg: | | | | | | | |
| Bibb | 80 | Fair | | Poor | | Poor | |
| | | Too acid | 0.50 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | | | | | Too acid | 0.59 |
| BoC: | | | | | | | |
| Bowie | 80 | Fair | | Good | | Fair | |
| | | Too acid | 0.32 | | | Too acid | 0.88 |
| | | Organic matter content low | 0.60 | | | Rock fragments | 0.99 |
| BrB: | | | | | | | |
| Briley | 85 | Poor | | Good | | Fair | |
| | | Wind erosion | 0.00 | | | Too acid | 0.98 |
| | | Too acid | 0.54 | | | | |
| | | Organic matter content low | 0.60 | | | | |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material: Rating class and limiting features | Value | Potential source of roadfill: Rating class and limiting features | Value | Potential source of topsoil: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| CrF: | | | | | | | |
| Cuthbert | 50 | Poor | | Fair | | Poor | |
| | | Too clayey | 0.00 | Shrink-swell | 0.90 | Too clayey | 0.00 |
| | | Organic matter content low | 0.18 | | | Rock fragments | 0.41 |
| | | Too acid | 0.50 | | | Too acid | 0.59 |
| | | | | | | Slope | 0.84 |
| Redsprings | 35 | Poor | | Fair | | Poor | |
| | | Too clayey | 0.00 | Low strength | 0.10 | Too clayey | 0.00 |
| | | Too acid | 0.68 | Shrink-swell | 0.87 | Rock fragments | 0.41 |
| | | Organic matter content low | 0.88 | | | Slope | 0.84 |
| CrG: | | | | | | | |
| Cuthbert | 60 | Fair | | Poor | | Poor | |
| | | Organic matter content low | 0.18 | Slope | 0.00 | Slope | 0.00 |
| | | Too acid | 0.50 | Shrink-swell | 0.90 | Too acid | 0.59 |
| | | | | | | Rock fragments | 0.68 |
| Redsprings | 25 | Poor | | Poor | | Poor | |
| | | Too clayey | 0.00 | Slope | 0.00 | Slope | 0.00 |
| | | Too acid | 0.54 | Low strength | 0.10 | Too clayey | 0.00 |
| | | Organic matter content low | 0.88 | Shrink-swell | 0.87 | Rock fragments | 0.41 |
| CtE: | | | | | | | |
| Cuthbert | 80 | Poor | | Fair | | Poor | |
| | | Too clayey | 0.00 | Shrink-swell | 0.87 | Too clayey | 0.00 |
| | | Organic matter content low | 0.18 | | | Rock fragments | 0.41 |
| | | Too acid | 0.50 | | | Too acid | 0.59 |
| | | | | | | Slope | 0.84 |
| CuE: | | | | | | | |
| Cuthbert | 80 | Poor | | Fair | | Poor | |
| | | Too clayey | 0.00 | Shrink-swell | 0.87 | Too clayey | 0.00 |
| | | Organic matter content low | 0.18 | | | Rock fragments | 0.41 |
| | | Too acid | 0.50 | | | Too acid | 0.59 |
| | | | | | | Slope | 0.84 |
| Cy: | | | | | | | |
| Cypress | 90 | Fair | | Poor | | Poor | |
| | | Too clayey | 0.08 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | Too acid | 0.50 | Low strength | 0.00 | Too clayey | 0.08 |
| | | | | Shrink-swell | 0.87 | Too acid | 0.32 |
| DaB: | | | | | | | |
| Darco | 80 | Poor | | Good | | Poor | |
| | | Wind erosion | 0.00 | | | Too sandy | 0.00 |
| | | Too sandy | 0.00 | | | | |
| | | Too acid | 0.68 | | | | |
| | | Organic matter content low | 0.88 | | | | |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material: Rating class and limiting features | Value | Potential source of roadfill: Rating class and limiting features | Value | Potential source of topsoil: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| DaE: | | | | | | | |
| Darco | 80 | Poor | | Good | | Fair | |
| | | Wind erosion | 0.00 | | | Too sandy | 0.09 |
| | | Too sandy | 0.09 | | | Slope | 0.37 |
| | | Too acid | 0.68 | | | | |
| | | Organic matter content low | 0.88 | | | | |
| DuA: | | | | | | | |
| Duffern | 80 | Poor | | Good | | Poor | |
| | | Too sandy | 0.00 | | | Too sandy | 0.00 |
| | | Wind erosion | 0.00 | | | | |
| | | Organic matter content low | 0.12 | | | | |
| | | Too acid | 0.68 | | | | |
| | | Droughty | 0.97 | | | | |
| EeB: | | | | | | | |
| Eastwood | 90 | Poor | | Poor | | Poor | |
| | | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
| | | Too acid | 0.12 | Shrink-swell | 0.12 | Too acid | 0.59 |
| | | Water erosion | 0.68 | | | | |
| | | Organic matter content low | 0.88 | | | | |
| EeD: | | | | | | | |
| Eastwood | 90 | Poor | | Poor | | Poor | |
| | | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
| | | Too acid | 0.12 | Shrink-swell | 0.15 | Too acid | 0.59 |
| | | Water erosion | 0.68 | | | Slope | 0.84 |
| | | Organic matter content low | 0.88 | | | | |
| ElA: | | | | | | | |
| Elrose | 85 | Fair | | Poor | | Fair | |
| | | Organic matter content low | 0.18 | Low strength | 0.00 | Rock fragments | 0.92 |
| | | Too acid | 0.68 | | | | |
| EtA: | | | | | | | |
| Erno | 50 | Fair | | Fair | | Fair | |
| | | Too acid | 0.50 | Low strength | 0.78 | Too acid | 0.88 |
| | | Organic matter content low | 0.60 | | | | |
| | | Water erosion | 0.68 | | | | |
| Thage | 35 | Fair | | Good | | Fair | |
| | | Too acid | 0.50 | | | Too acid | 0.88 |
| | | Organic matter content low | 0.60 | | | | |
| | | Water erosion | 0.90 | | | | |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| EyB: | | | | | | | |
| Eylau | 80 | Fair | | Fair | | Fair | |
| | | Too acid | 0.32 | Low strength | 0.78 | Too acid | 0.88 |
| | | Organic matter content low | 0.68 | Wetness depth | 0.89 | Wetness depth | 0.89 |
| | | Water erosion | 0.99 | | | | |
| GaA: | | | | | | | |
| Gallime | 75 | Fair | | Fair | | Good | |
| | | Too acid | 0.54 | Low strength | 0.78 | | |
| | | Organic matter content low | 0.60 | | | | |
| GaC: | | | | | | | |
| Gallime | 48 | Fair | | Good | | Good | |
| | | Organic matter content low | 0.60 | | | | |
| | | Too acid | 0.84 | | | | |
| Guyton | 42 | Fair | | Poor | | Poor | |
| | | Too acid | 0.20 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | Organic matter content low | 0.88 | Low strength | 0.00 | Too acid | 0.76 |
| | | Water erosion | 0.90 | | | | |
| Gf: | | | | | | | |
| Gladewater | 90 | Poor | | Poor | | Poor | |
| | | Too clayey | 0.00 | Shrink-swell | 0.00 | Too clayey | 0.00 |
| | | Organic matter content low | 0.60 | Low strength | 0.00 | Wetness depth | 0.91 |
| | | Too acid | 0.68 | Wetness depth | 0.91 | | |
| HaA: | | | | | | | |
| Hainesville | 90 | Poor | | Good | | Poor | |
| | | Too sandy | 0.00 | | | Too sandy | 0.00 |
| | | Wind erosion | 0.00 | | | | |
| | | Too acid | 0.68 | | | | |
| | | Organic matter content low | 0.88 | | | | |
| | | Droughty | 0.93 | | | | |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Fair | | Good | | Good | |
| | | Organic matter content low | 0.88 | | | | |
| | | Too acid | 0.97 | | | | |
| Iu: | | | | | | | |
| Iulus | 80 | Fair | | Fair | | Fair | |
| | | Too acid | 0.54 | Wetness depth | 0.98 | Rock fragments | 0.95 |
| | | Organic matter content low | 0.60 | | | Wetness depth | 0.98 |
| | | Water erosion | 0.99 | | | Too acid | 0.98 |
| | | Too sandy | 0.99 | | | Too sandy | 0.99 |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material: Rating class and limiting features | Value | Potential source of roadfill: Rating class and limiting features | Value | Potential source of topsoil: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| KiC: | | | | | | | |
| Kirvin | 80 | Fair | | Poor | | Fair | |
| | | Too acid | 0.03 | Low strength | 0.00 | Too clayey | 0.08 |
| | | Too clayey | 0.12 | Shrink-swell | 0.89 | Too acid | 0.32 |
| | | Organic matter content low | 0.60 | | | | |
| KiD: | | | | | | | |
| Kirvin | 95 | Poor | | Poor | | Fair | |
| | | Droughty | 0.00 | Low strength | 0.00 | Too clayey | 0.08 |
| | | Too clayey | 0.12 | Shrink-swell | 0.87 | Too acid | 0.32 |
| | | Too acid | 0.50 | | | | |
| | | Organic matter content low | 0.60 | | | | |
| KrC: | | | | | | | |
| Kirvin | 80 | Poor | | Poor | | Poor | |
| | | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
| | | Too acid | 0.12 | Shrink-swell | 0.87 | Too acid | 0.59 |
| | | Organic matter content low | 0.60 | | | | |
| | | Water erosion | 0.99 | | | | |
| KuA: | | | | | | | |
| Kullit | 85 | Fair | | Poor | | Fair | |
| | | Organic matter content low | 0.12 | Low strength | 0.00 | Too acid | 0.88 |
| | | Too acid | 0.32 | Wetness depth | 0.89 | Wetness depth | 0.89 |
| | | Water erosion | 0.99 | | | | |
| LcB: | | | | | | | |
| Latch | 90 | Poor | | Good | | Fair | |
| | | Wind erosion | 0.00 | | | Too sandy | 0.03 |
| | | Too sandy | 0.03 | | | | |
| | | Too acid | 0.68 | | | | |
| | | Organic matter content low | 0.88 | | | | |
| LmB: | | | | | | | |
| Latch | 60 | Poor | | Good | | Poor | |
| | | Wind erosion | 0.00 | | | Too sandy | 0.00 |
| | | Too sandy | 0.00 | | | | |
| | | Too acid | 0.68 | | | | |
| | | Organic matter content low | 0.88 | | | | |
| Mollville | 40 | Fair | | Poor | | Poor | |
| | | Organic matter content low | 0.12 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | Too acid | 0.54 | Low strength | 0.22 | Too acid | 0.98 |
| | | Sodium content | 0.90 | Shrink-swell | 0.94 | | |
| | | Water erosion | 0.99 | | | | |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material: Rating class and limiting features | Value | Potential source of roadfill: Rating class and limiting features | Value | Potential source of topsoil: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| LtB: | | | | | | | |
| Latex | 80 | Fair | | Poor | | Fair | |
| | | Too acid | 0.20 | Low strength | 0.00 | Too acid | 0.88 |
| | | Organic matter content low | 0.60 | Shrink-swell | 0.61 | | |
| | | Water erosion | 0.99 | | | | |
| LuC: | | | | | | | |
| Lilbert | 80 | Poor | | Good | | Fair | |
| | | Wind erosion | 0.00 | | | Too sandy | 0.09 |
| | | Too sandy | 0.09 | | | Too acid | 0.98 |
| | | Too acid | 0.12 | | | | |
| | | Organic matter content low | 0.68 | | | | |
| Mf: | | | | | | | |
| Mantachie | 80 | Fair | | Fair | | Fair | |
| | | Too acid | 0.50 | Wetness depth | 0.04 | Wetness depth | 0.04 |
| | | | | | | Too acid | 0.88 |
| MiA: | | | | | | | |
| Metcalf | 80 | Fair | | Poor | | Fair | |
| | | Organic matter content low | 0.12 | Low strength | 0.00 | Wetness depth | 0.53 |
| | | Too acid | 0.50 | Wetness depth | 0.53 | Too acid | 0.76 |
| | | Water erosion | 0.68 | Shrink-swell | 0.80 | | |
| MkA: | | | | | | | |
| Mollville | 80 | Fair | | Poor | | Poor | |
| | | Organic matter content low | 0.12 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | Too acid | 0.54 | Low strength | 0.22 | Sodium content | 0.90 |
| | | Sodium content | 0.90 | Shrink-swell | 0.91 | Too acid | 0.98 |
| | | Water erosion | 0.99 | | | | |
| Kildare | 15 | Poor | | Poor | | Poor | |
| | | Sodium content | 0.00 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | Organic matter content low | 0.12 | | | Sodium content | 0.00 |
| | | Too acid | 0.32 | | | Too acid | 0.98 |
| | | Water erosion | 0.68 | | | | |
| MlA: | | | | | | | |
| Mollville | 90 | Fair | | Poor | | Poor | |
| | | Organic matter content low | 0.12 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | Too acid | 0.54 | Low strength | 0.78 | Sodium content | 0.90 |
| | | Sodium content | 0.90 | Shrink-swell | 0.87 | Too acid | 0.98 |
| | | Water erosion | 0.99 | | | | |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material: Rating class and limiting features | Value | Potential source of roadfill: Rating class and limiting features | Value | Potential source of topsoil: Rating class and limiting features | Value |
|---|---|---|---|---|---|---|---|
| Mm: | | | | | | | |
| Mooreville | 50 | Fair | | Poor | | Fair | |
| | | Too acid | 0.32 | Low strength | 0.00 | Wetness depth | 0.76 |
| | | Water erosion | 0.99 | Wetness depth | 0.76 | Too acid | 0.88 |
| | | | | Shrink-swell | 0.87 | | |
| Mantachie | 35 | Fair | | Fair | | Fair | |
| | | Too acid | 0.50 | Wetness depth | 0.04 | Wetness depth | 0.04 |
| | | | | | | Too acid | 0.88 |
| RgC: | | | | | | | |
| Redsprings | 80 | Fair | | Fair | | Fair | |
| | | Too clayey | 0.08 | Low strength | 0.10 | Too clayey | 0.06 |
| | | Too acid | 0.68 | Shrink-swell | 0.87 | Rock fragments | 0.41 |
| | | Organic matter content low | 0.88 | | | | |
| RnB: | | | | | | | |
| Rentzel | 80 | Poor | | Fair | | Fair | |
| | | Wind erosion | 0.00 | Wetness depth | 0.76 | Wetness depth | 0.76 |
| | | Too acid | 0.50 | | | | |
| | | Organic matter content low | 0.60 | | | | |
| SaC: | | | | | | | |
| Sacul | 85 | Poor | | Fair | | Poor | |
| | | Too clayey | 0.00 | Shrink-swell | 0.95 | Too clayey | 0.00 |
| | | Too acid | 0.12 | | | Too acid | 0.59 |
| | | | | | | Rock fragments | 0.68 |
| SlC: | | | | | | | |
| Sailes | 85 | Fair | | Good | | Fair | |
| | | Too acid | 0.32 | | | Rock fragments | 0.76 |
| | | Organic matter content low | 0.88 | | | Too acid | 0.88 |
| Sm: | | | | | | | |
| Sardis | 60 | Fair | | Poor | | Fair | |
| | | Too acid | 0.54 | Low strength | 0.00 | Wetness depth | 0.76 |
| | | Organic matter content low | 0.88 | Wetness depth | 0.76 | Too acid | 0.98 |
| | | Water erosion | 0.99 | | | | |
| Manco | 40 | Fair | | Poor | | Fair | |
| | | Too acid | 0.03 | Low strength | 0.00 | Wetness depth | 0.04 |
| | | Organic matter content low | 0.68 | Wetness depth | 0.04 | Too acid | 0.32 |
| | | Water erosion | 0.99 | | | | |
| So: | | | | | | | |
| Socagee | 80 | Fair | | Poor | | Poor | |
| | | Too acid | 0.03 | Wetness depth | 0.00 | Wetness depth | 0.00 |
| | | | | Low strength | 0.00 | Too acid | 0.32 |
| | | | | Shrink-swell | 0.87 | | |

Table 26.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| TnB: | | | | | | | |
| Tenaha | 80 | Poor | | Good | | Fair | |
| | | Wind erosion | 0.00 | | | Too acid | 0.50 |
| | | Too acid | 0.08 | | | | |
| | | Organic matter content low | 0.18 | | | | |
| TnD: | | | | | | | |
| Tenaha | 80 | Poor | | Good | | Fair | |
| | | Wind erosion | 0.00 | | | Too sandy | 0.09 |
| | | Too acid | 0.08 | | | Slope | 0.84 |
| | | Too sandy | 0.09 | | | Rock fragments | 0.92 |
| | | Organic matter content low | 0.18 | | | Too acid | 0.98 |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Fair | | Good | | Fair | |
| | | Organic matter content low | 0.12 | | | Rock fragments | 0.50 |
| | | Too acid | 0.68 | | | | |
| | | Droughty | 0.98 | | | | |
| WrA: | | | | | | | |
| Wrightsville | 90 | Fair | | Poor | | Poor | |
| | | Too clayey | 0.02 | Low strength | 0.00 | Wetness depth | 0.00 |
| | | Organic matter content low | 0.12 | Wetness depth | 0.00 | Too clayey | 0.01 |
| | | Too acid | 0.50 | Shrink-swell | 0.53 | Too acid | 0.76 |
| | | Water erosion | 0.90 | | | | |

Table 27.--Ponds and Embankments

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas | | Embankments, dikes, and levees | | Aquifer-fed excavated ponds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| AaB: | | | | | | | |
| Alazan | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.99 | Slow refill | 0.30 |
| | | | | Piping | 0.78 | Cutbanks cave | 0.10 |
| | | | | | | Depth to saturated zone | 0.01 |
| AsA: | | | | | | | |
| Ashford | 90 | Not limited | | Very limited | | Very limited | |
| | | | | Ponding | 1.00 | Depth to water | 1.00 |
| | | | | Depth to saturated zone | 1.00 | | |
| | | | | Hard to pack | 1.00 | | |
| BaB: | | | | | | | |
| Bernaldo | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Seepage | 0.01 | Depth to water | 1.00 |
| BaD: | | | | | | | |
| Bernaldo | 90 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Piping | 0.91 | Depth to water | 1.00 |
| | | Slope | 0.50 | | | | |
| Bg: | | | | | | | |
| Bibb | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 1.00 | Slow refill | 0.30 |
| | | | | | | Cutbanks cave | 0.10 |
| BoC: | | | | | | | |
| Bowie | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Seepage | 0.70 | | | Depth to water | 1.00 |
| | | Slope | 0.08 | | | | |
| BrB: | | | | | | | |
| Briley | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.07 | Depth to water | 1.00 |
| | | Slope | 0.08 | | | | |
| CrF: | | | | | | | |
| Cuthbert | 50 | Very limited | | Not limited | | Very limited | |
| | | Slope | 1.00 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |
| Redsprings | 35 | Very limited | | Not limited | | Very limited | |
| | | Slope | 1.00 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |

Table 27.--Ponds and Embankments--Continued

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas | | Embankments, dikes, and levees | | Aquifer-fed excavated ponds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| CrG: | | | | | | | |
| Cuthbert | 60 | Very limited | | Not limited | | Very limited | |
| | | Slope | 1.00 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |
| Redsprings | 25 | Very limited | | Not limited | | Very limited | |
| | | Slope | 1.00 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |
| CtE: | | | | | | | |
| Cuthbert | 80 | Very limited | | Not limited | | Very limited | |
| | | Slope | 1.00 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |
| CuE: | | | | | | | |
| Cuthbert | 80 | Very limited | | Not limited | | Very limited | |
| | | Slope | 1.00 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |
| Cy: | | | | | | | |
| Cypress | 90 | Not limited | | Very limited | | Very limited | |
| | | | | Ponding | 1.00 | Slow refill | 1.00 |
| | | | | Depth to saturated zone | 1.00 | Cutbanks cave | 0.10 |
| | | | | Hard to pack | 0.46 | | |
| DaB: | | | | | | | |
| Darco | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.13 | Depth to water | 1.00 |
| | | Slope | 0.08 | | | | |
| DaE: | | | | | | | |
| Darco | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.05 | Depth to water | 1.00 |
| | | Slope | 1.00 | | | | |
| DuA: | | | | | | | |
| Duffern | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.22 | Depth to water | 1.00 |
| EeB: | | | | | | | |
| Eastwood | 90 | Not limited | | Somewhat limited | | Very limited | |
| | | | | Hard to pack | 0.68 | Depth to water | 1.00 |
| EeD: | | | | | | | |
| Eastwood | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Slope | 1.00 | Hard to pack | 0.56 | Depth to water | 1.00 |
| ElA: | | | | | | | |
| Elrose | 85 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Piping | 0.34 | Depth to water | 1.00 |
| | | Slope | 0.08 | | | | |

Table 27.--Ponds and Embankments--Continued

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas | | Embankments, dikes, and levees | | Aquifer-fed excavated ponds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| EtA: | | | | | | | |
| Erno | 50 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Piping | 0.91 | Depth to water | 1.00 |
| | | | | Depth to saturated zone | 0.24 | | |
| Thage | 35 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Piping | 0.87 | Depth to water | 1.00 |
| | | | | Depth to saturated zone | 0.43 | | |
| EyB: | | | | | | | |
| Eylau | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.86 | Depth to water | 1.00 |
| | | | | Piping | 0.85 | | |
| GaA: | | | | | | | |
| Gallime | 75 | Very limited | | Not limited | | Very limited | |
| | | Seepage | 1.00 | | | Depth to water | 1.00 |
| GaC: | | | | | | | |
| Gallime | 48 | Very limited | | Not limited | | Very limited | |
| | | Seepage | 1.00 | | | Depth to water | 1.00 |
| Guyton | 42 | Not limited | | Very limited | | Very limited | |
| | | | | Depth to saturated zone | 1.00 | Depth to water | 1.00 |
| | | | | Piping | 1.00 | | |
| Gf: | | | | | | | |
| Gladewater | 90 | Not limited | | Somewhat limited | | Very limited | |
| | | | | Hard to pack | 0.99 | Depth to water | 1.00 |
| | | | | Depth to saturated zone | 0.84 | | |
| HaA: | | | | | | | |
| Hainesville | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.34 | Depth to water | 1.00 |
| Hb: | | | | | | | |
| Hannahatchee | 95 | Somewhat limited | | Not limited | | Very limited | |
| | | Seepage | 0.70 | | | Depth to water | 1.00 |
| Iu: | | | | | | | |
| Iulus | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.68 | Depth to water | 1.00 |
| | | | | Seepage | 0.02 | | |
| KiC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Slope | 0.08 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |

Table 27.--Ponds and Embankments--Continued

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas | | Embankments, dikes, and levees | | Aquifer-fed excavated ponds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| KiD: | | | | | | | |
| Kirvin | 95 | Somewhat limited | | Not limited | | Very limited | |
| | | Seepage | 0.03 | | | Depth to water | 1.00 |
| KrC: | | | | | | | |
| Kirvin | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Seepage | 0.03 | | | Depth to water | 1.00 |
| KuA: | | | | | | | |
| Kullit | 85 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.86 | Slow refill | 0.30 |
| | | | | Piping | 0.02 | Cutbanks cave | 0.10 |
| | | | | | | Depth to saturated zone | 0.06 |
| LcB: | | | | | | | |
| Latch | 90 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Depth to saturated zone | 0.24 | Depth to water | 1.00 |
| | | | | Seepage | 0.06 | | |
| LmB: | | | | | | | |
| Latch | 60 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Depth to saturated zone | 0.24 | Depth to water | 1.00 |
| | | | | Seepage | 0.13 | | |
| Mollville | 40 | Very limited | | Very limited | | Somewhat limited | |
| | | Seepage | 1.00 | Ponding | 1.00 | Cutbanks cave | 0.10 |
| | | | | Depth to saturated zone | 1.00 | | |
| | | | | Piping | 0.99 | | |
| | | | | Seepage | 0.01 | | |
| LtB: | | | | | | | |
| Latex | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.02 | Depth to water | 1.00 |
| LuC: | | | | | | | |
| Lilbert | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.05 | Depth to water | 1.00 |
| | | Slope | 0.08 | | | | |
| Mf: | | | | | | | |
| Mantachie | 80 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Seepage | 0.72 | Depth to saturated zone | 1.00 | Slow refill | 0.28 |
| | | | | Piping | 1.00 | Cutbanks cave | 0.10 |
| MiA: | | | | | | | |
| Metcalf | 80 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.04 | Depth to saturated zone | 0.99 | Depth to water | 1.00 |
| | | | | Hard to pack | 0.29 | | |

Table 27.--Ponds and Embankments--Continued

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas | | Embankments, dikes, and levees | | Aquifer-fed excavated ponds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| MkA: | | | | | | | |
| Mollville | 80 | Very limited | | Very limited | | Very limited | |
| | | Seepage | 1.00 | Ponding | 1.00 | Cutbanks cave | 1.00 |
| | | | | Depth to saturated zone | 1.00 | | |
| | | | | Piping | 1.00 | | |
| | | | | Seepage | 0.06 | | |
| Kildare | 15 | Very limited | | Very limited | | Very limited | |
| | | Seepage | 1.00 | Ponding | 1.00 | Cutbanks cave | 1.00 |
| | | | | Depth to saturated zone | 1.00 | Depth to saturated zone | 0.98 |
| | | | | Piping | 1.00 | | |
| | | | | Seepage | 0.06 | | |
| MlA: | | | | | | | |
| Mollville | 90 | Very limited | | Very limited | | Somewhat limited | |
| | | Seepage | 1.00 | Ponding | 1.00 | Cutbanks cave | 0.10 |
| | | | | Depth to saturated zone | 1.00 | | |
| | | | | Piping | 1.00 | | |
| | | | | Seepage | 0.01 | | |
| Mm: | | | | | | | |
| Mooreville | 50 | Somewhat limited | | Somewhat limited | | Somewhat limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.95 | Slow refill | 0.30 |
| | | | | Seepage | 0.01 | Cutbanks cave | 0.10 |
| | | | | | | Depth to saturated zone | 0.02 |
| Mantachie | 35 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Seepage | 0.72 | Depth to saturated zone | 1.00 | Slow refill | 0.28 |
| | | | | Piping | 1.00 | Cutbanks cave | 0.10 |
| RgC: | | | | | | | |
| Redsprings | 80 | Somewhat limited | | Not limited | | Very limited | |
| | | Slope | 0.08 | | | Depth to water | 1.00 |
| | | Seepage | 0.03 | | | | |
| RnB: | | | | | | | |
| Rentzel | 80 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Depth to saturated zone | 0.95 | Depth to water | 1.00 |
| | | | | Seepage | 0.06 | | |
| SaC: | | | | | | | |
| Sacul | 85 | Somewhat limited | | Somewhat limited | | Very limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 0.43 | Depth to water | 1.00 |
| SlC: | | | | | | | |
| Sailes | 85 | Somewhat limited | | Not limited | | Very limited | |
| | | Seepage | 0.72 | | | Depth to water | 1.00 |

Table 27.--Ponds and Embankments--Continued

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas | | Embankments, dikes, and levees | | Aquifer-fed excavated ponds | |
|---|---|---|---|---|---|---|---|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Sm: | | | | | | | |
| Sardis | 60 | Somewhat limited | | Very limited | | Very limited | |
| | | Seepage | 0.70 | Piping | 1.00 | Depth to water | 1.00 |
| | | | | Depth to saturated zone | 0.95 | | |
| | | | | Seepage | 0.03 | | |
| Manco | 40 | Somewhat limited | | Very limited | | Somewhat limited | |
| | | Seepage | 0.70 | Depth to saturated zone | 1.00 | Slow refill | 0.30 |
| | | | | Piping | 0.73 | Cutbanks cave | 0.10 |
| So: | | | | | | | |
| Socagee | 80 | Somewhat limited | | Very limited | | Very limited | |
| | | Seepage | 0.03 | Depth to saturated zone | 1.00 | Depth to water | 1.00 |
| | | | | Piping | 0.35 | | |
| TnB: | | | | | | | |
| Tenaha | 80 | Very limited | | Not limited | | Very limited | |
| | | Seepage | 1.00 | | | Depth to water | 1.00 |
| TnD: | | | | | | | |
| Tenaha | 80 | Very limited | | Not limited | | Very limited | |
| | | Seepage | 1.00 | | | Depth to water | 1.00 |
| | | Slope | 1.00 | | | | |
| Ud: | | | | | | | |
| Udorthents, gravelly | 85 | Very limited | | Somewhat limited | | Very limited | |
| | | Seepage | 1.00 | Seepage | 0.01 | Depth to water | 1.00 |
| WrA: | | | | | | | |
| Wrightsville | 90 | Not limited | | Very limited | | Very limited | |
| | | | | Ponding | 1.00 | Depth to water | 1.00 |
| | | | | Depth to saturated zone | 1.00 | | |
| | | | | Piping | 0.29 | | |

Table 28.--Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

| Map symbol and soil name | Depth | USDA texture | Classification | | Fragments | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | >10 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| AaB: | | | | | | | | | | | | |
| Alazan---------- | 0-3 | Fine sandy loam | CL-ML, ML | A-4 | 0 | 0 | 100 | 97-100 | 85-100 | 40-55 | 0-25 | NP-7 |
| | 3-12 | Fine sandy loam | ML, CL-ML | A-4 | 0 | 0 | 100 | 97-100 | 85-100 | 40-55 | 0-25 | NP-7 |
| | 12-20 | Loam, clay loam | CL | A-4, A-6 | 0 | 0 | 100 | 97-100 | 90-100 | 55-75 | 25-40 | 8-22 |
| | 20-26 | Clay loam, loam | CL | A-4, A-6 | 0 | 0 | 100 | 97-100 | 90-100 | 60-75 | 25-40 | 8-22 |
| | 26-75 | Clay loam, loam | CL | A-4, A-6 | 0 | 0 | 100 | 97-100 | 90-100 | 60-75 | 25-40 | 8-22 |
| | 75-80 | Clay loam, loam | CL | A-4, A-6 | 0 | 0 | 100 | 97-100 | 90-100 | 60-75 | 25-40 | 8-22 |
| AsA: | | | | | | | | | | | | |
| Ashford--------- | 0-3 | Clay | CH | A-7-6 | 0 | 0 | 100 | 95-100 | 85-100 | 70-90 | 51-75 | 33-49 |
| | 3-58 | Clay | CH | A-7-6 | 0 | 0 | 95-100 | 90-100 | 85-100 | 75-100 | 55-85 | 34-55 |
| | 58-75 | Clay | CH | A-7-6 | 0 | 0 | 95-100 | 90-100 | 80-100 | 75-100 | 55-85 | 35-55 |
| | 75-80 | Clay | CH | A-7-6 | 0 | 0 | 95-100 | 90-100 | 80-100 | 65-95 | 51-85 | 33-55 |
| BaB: | | | | | | | | | | | | |
| Bernaldo-------- | 0-9 | Fine sandy loam | SM, ML | A-4 | 0 | 0 | 100 | 95-100 | 80-100 | 40-55 | 0-25 | NP-4 |
| | 9-18 | Loam, fine sandy loam, very fine sandy loam | SM, ML, CL-ML | A-4 | 0 | 0 | 100 | 95-100 | 75-100 | 45-70 | 0-25 | NP-5 |
| | 18-31 | Sandy clay loam, loam, clay loam | CL | A-6 | 0 | 0 | 98-100 | 95-100 | 75-95 | 40-55 | 26-40 | 12-24 |
| | 31-80 | Sandy clay loam, fine sandy loam, loam | SM, SC, ML, CL | A-2-4, A-4, A-6 | 0 | 0 | 100 | 95-100 | 75-95 | 35-55 | 20-40 | 3-22 |
| BaD: | | | | | | | | | | | | |
| Bernaldo-------- | 0-4 | Fine sandy loam | ML, SM | A-4 | 0 | 0 | 100 | 95-100 | 80-100 | 40-50 | 0-25 | NP-4 |
| | 4-18 | Fine sandy loam, very fine sandy loam, loam | SM, ML, CL-ML | A-4 | 0 | 0 | 100 | 95-100 | 80-100 | 35-50 | 0-25 | NP-5 |
| | 18-46 | Sandy clay loam, loam, clay loam | CL | A-6 | 0 | 0 | 98-100 | 95-100 | 80-100 | 50-65 | 26-40 | 12-24 |
| | 46-80 | Loam, fine sandy loam, sandy clay loam | SC, SM, ML, CL | A-2-4, A-4, A-6 | 0 | 0 | 100 | 95-100 | 80-100 | 28-70 | 20-40 | 3-22 |
| Bg: | | | | | | | | | | | | |
| Bibb------------ | 0-12 | Fine sandy loam | SM, SC-SM, ML, CL-ML | A-2, A-4 | 0 | 0-4 | 95-100 | 85-100 | 75-95 | 35-55 | 0-25 | NP-7 |
| | 12-80 | Fine sandy loam | CL-ML, ML, SC-SM, SM | A-2, A-4 | 0 | 0-4 | 95-100 | 85-100 | 75-95 | 35-55 | 0-25 | NP-7 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Fragments | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | >10 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| BoC: | | | | | | | | | | | | |
| Bowie----------- | 0-10 | Fine sandy loam | SC-SM, CL-ML, ML, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-95 | 35-50 | 0-25 | NP-6 |
| | 10-27 | Sandy clay loam, clay loam, fine sandy loam | CL, SC | A-4, A-6 | 0 | 0 | 90-100 | 80-100 | 70-95 | 35-60 | 20-40 | 8-25 |
| | 27-73 | Fine sandy loam, sandy clay loam, clay loam | SC, CL | A-2, A-4, A-6 | 0 | 0 | 85-100 | 70-100 | 60-100 | 30-60 | 20-40 | 8-25 |
| | 73-80 | Clay loam, sandy clay loam, sandy clay | CL | A-6, A-7 | 0 | 0 | 95-100 | 85-100 | 70-95 | 55-75 | 31-49 | 14-30 |
| BrB: | | | | | | | | | | | | |
| Briley---------- | 0-10 | Loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 85-100 | 20-36 | 17-33 | 2-12 |
| | 10-22 | Loamy fine sand | SM, SC-SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 85-100 | 25-36 | 16-31 | 2-12 |
| | 22-80 | Sandy clay loam, fine sandy loam | CL, SC | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-95 | 35-55 | 25-45 | 9-25 |
| CrF: | | | | | | | | | | | | |
| Cuthbert-------- | 0-13 | Fine sandy loam | CL-ML, ML, SC-SM, SM | A-2-4, A-4 | 0 | 0-2 | 85-100 | 65-100 | 55-95 | 25-50 | 0-32 | NP-7 |
| | 13-27 | Clay, sandy clay loam, sandy clay | CH, CL, SC | A-6, A-7-6 | 0 | 0-1 | 85-100 | 65-100 | 50-90 | 35-75 | 37-64 | 19-40 |
| | 27-31 | Clay loam, fine sandy loam, sandy clay loam | CL, SC | A-2-6, A-6, A-7 | 0 | 0-1 | 85-100 | 70-100 | 60-100 | 35-80 | 29-45 | 11-26 |
| | 31-80 | Sandy clay loam | SC, CL | A-2-6, A-6, A-7 | 0 | 0-3 | 85-100 | 70-100 | 60-90 | 30-60 | 21-45 | 7-26 |
| Redsprings------ | 0-9 | Gravelly fine sandy loam | SC-SM, SC, CL-ML, CL | A-2-4, A-2-7, A-4 | 0-1 | 0-5 | 85-95 | 60-95 | 50-95 | 20-50 | 20-42 | 4-20 |
| | 9-44 | Clay, clay loam | CH, CL | A-7-6 | 0 | 0-1 | 80-100 | 60-100 | 55-100 | 45-90 | 41-60 | 18-35 |
| | 44-53 | Clay, sandy clay loam, clay loam | CH, CL | A-6, A-7-6 | 0 | 0-7 | 95-100 | 85-100 | 70-100 | 55-80 | 32-56 | 16-30 |
| | 53-80 | Sandy clay loam | SC, CL, CH | A-4, A-6, A-7-6 | 0 | 0-6 | 90-100 | 70-100 | 60-95 | 35-60 | 25-57 | 9-31 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| CrG: | | | | | | | | | | | | |
| Cuthbert-------- | 0-13 | Gravelly fine sandy loam | SM, SC-SM, GM, GC-GM | A-1-b, A-2-4, A-4 | 0-2 | 0-5 | 70-85 | 40-85 | 35-85 | 15-45 | 0-32 | NP-7 |
| | 13-21 | Clay, sandy clay loam, sandy clay | SC, CH, CL | A-6, A-7-6 | 0 | 0-1 | 85-100 | 65-100 | 50-90 | 35-75 | 37-64 | 19-40 |
| | 21-35 | Sandy clay loam, fine sandy loam, clay loam | SC, CL | A-2-6, A-6, A-7 | 0 | 0-1 | 85-100 | 70-100 | 55-95 | 30-65 | 29-45 | 11-26 |
| | 35-80 | Sandy clay loam | SC, CL | A-2-6, A-6, A-7 | 0 | 0-3 | 85-100 | 70-100 | 60-95 | 30-60 | 21-45 | 7-26 |
| Redsprings------ | 0-6 | Gravelly fine sandy loam | SC, CL, CL-ML, SC-SM | A-2-4, A-2-7, A-4 | 0-1 | 0-5 | 85-95 | 60-95 | 50-95 | 20-50 | 20-42 | 4-20 |
| | 6-33 | Clay, clay loam | CH, CL | A-7-6 | 0 | 0-1 | 80-100 | 60-100 | 55-100 | 45-85 | 41-60 | 18-35 |
| | 33-41 | Clay, clay loam | CL, CH | A-6, A-7-6 | 0 | 0-7 | 95-100 | 85-100 | 75-100 | 60-85 | 32-56 | 16-30 |
| | 41-80 | Sandy clay loam | SC, CL, CH | A-4, A-6, A-7-6 | 0 | 0-6 | 90-100 | 70-100 | 60-95 | 35-60 | 25-57 | 9-31 |
| CtE: | | | | | | | | | | | | |
| Cuthbert-------- | 0-9 | Fine sandy loam | SM, SC-SM, ML, CL-ML | A-2-4, A-4 | 0 | 0-2 | 85-100 | 65-100 | 55-95 | 25-50 | 0-32 | NP-7 |
| | 9-24 | Clay, sandy clay loam, sandy clay | CL, CH, SC | A-6, A-7-6 | 0 | 0-1 | 85-100 | 65-100 | 50-90 | 35-75 | 37-64 | 19-40 |
| | 24-31 | Clay loam, fine sandy loam, sandy clay loam | SC, CL | A-2-6, A-6, A-7 | 0 | 0-1 | 85-100 | 70-100 | 60-100 | 35-80 | 29-45 | 11-26 |
| | 31-80 | Sandy clay loam | SC, CL | A-2-6, A-6, A-7 | 0 | 0-3 | 85-100 | 70-100 | 60-90 | 30-60 | 21-45 | 7-26 |
| CuE: | | | | | | | | | | | | |
| Cuthbert-------- | 0-9 | Gravelly fine sandy loam | SM, SC-SM, GM, GC-GM | A-1-b, A-2-4, A-4 | 0-2 | 0-5 | 70-85 | 40-85 | 35-85 | 15-45 | 0-32 | NP-7 |
| | 9-30 | Clay, sandy clay loam, sandy clay | CH, CL, SC | A-6, A-7-6 | 0 | 0-1 | 85-100 | 65-100 | 50-95 | 35-75 | 37-64 | 19-40 |
| | 30-35 | Clay loam, fine sandy loam, sandy clay loam | SC, CL | A-2-6, A-6, A-7 | 0 | 0-1 | 85-100 | 70-100 | 60-100 | 35-80 | 29-45 | 11-26 |
| | 35-80 | Sandy clay loam | CL, SC | A-2-6, A-6, A-7 | 0 | 0-3 | 85-100 | 70-100 | 60-95 | 30-60 | 21-45 | 7-26 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Fragments | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | >10 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| Cy: | | | | | | | | | | | | |
| Cypress--------- | 0-3 | Clay loam, silty clay loam | CL | A-6, A-7 | 0 | 0 | 100 | 100 | 85-100 | 65-85 | 34-48 | 14-25 |
| | 3-80 | Clay loam, clay, silty clay | CL, CH | A-7-6 | 0 | 0 | 100 | 100 | 95-100 | 75-100 | 43-66 | 21-39 |
| DaB: | | | | | | | | | | | | |
| Darco----------- | 0-10 | Loamy fine sand | SM | A-2-4 | 0 | 0-1 | 95-100 | 90-100 | 80-100 | 20-35 | 16-20 | NP-3 |
| | 10-62 | Fine sand, loamy fine sand | SM | A-2-4 | 0 | 0-1 | 95-100 | 90-100 | 80-100 | 15-25 | 16-20 | NP-3 |
| | 62-74 | Sandy clay loam, fine sandy loam | CL, SC | A-2-4, A-6, A-7-6 | 0 | 0 | 95-100 | 90-100 | 75-98 | 35-60 | 25-45 | 9-28 |
| | 74-80 | Sandy clay loam, fine sandy loam | SC, SC-SM | A-2, A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-98 | 35-60 | 20-40 | 5-18 |
| DaE: | | | | | | | | | | | | |
| Darco----------- | 0-9 | Loamy fine sand | SM | A-2-4 | 0 | 0-1 | 95-100 | 90-100 | 80-100 | 20-35 | 16-20 | NP-3 |
| | 9-59 | Loamy fine sand, fine sand | SM | A-2-4 | 0 | 0-1 | 95-100 | 90-100 | 80-100 | 20-40 | 16-20 | NP-3 |
| | 59-80 | Sandy clay loam, fine sandy loam | SC, SC-SM | A-2, A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-95 | 35-60 | 20-40 | 5-18 |
| DuA: | | | | | | | | | | | | |
| Duffern--------- | 0-4 | Fine sand | SM, SP-SM | A-2-4, A-3 | 0 | 0 | 98-100 | 95-100 | 85-100 | 5-25 | 0-25 | NP-4 |
| | 4-43 | Fine sand, sand | SP-SM, SM | A-2-4, A-3 | 0 | 0 | 98-100 | 95-100 | 85-100 | 5-25 | 0-25 | NP-4 |
| | 43-80 | Fine sand, sand | SM, SP-SM | A-2-4, A-3 | 0 | 0 | 98-100 | 95-100 | 85-100 | 5-25 | 0-25 | NP-4 |
| EeB: | | | | | | | | | | | | |
| Eastwood-------- | 0-10 | Very fine sandy loam | CL-ML, CL, ML, SC-SM | A-4, A-6 | 0 | 0 | 95-100 | 95-100 | 90-100 | 50-65 | 20-37 | 3-20 |
| | 10-70 | Clay, silty clay | CH, CL | A-7-6 | 0 | 0 | 100 | 95-100 | 85-100 | 75-100 | 40-75 | 25-48 |
| | 70-80 | Stratified fine sandy loam to silty clay loam | SC-SM, SC, CL-ML, CL | A-4, A-6, A-7-6 | 0 | 0 | 95-100 | 90-100 | 80-100 | 45-95 | 25-68 | 5-44 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| EeD: | | | | | | | | | | | | |
| Eastwood | 0-5 | Very fine sandy loam | CL, CL-ML, ML, SC-SM | A-4, A-6 | 0 | 0 | 95-100 | 95-100 | 85-100 | 45-65 | 20-37 | 3-20 |
| | 5-47 | Clay, silty clay | CH, CL | A-7-6 | 0 | 0 | 100 | 95-100 | 85-100 | 70-95 | 40-75 | 25-48 |
| | 47-57 | Clay loam, silty clay loam, loam | CL, CH | A-6, A-7-6 | 0 | 0 | 100 | 95-100 | 80-95 | 55-75 | 35-65 | 15-45 |
| | 57-80 | Stratified fine sandy loam to silty clay loam | SC-SM, SC, CL, CL-ML | A-4, A-6, A-7-6 | 0 | 0 | 95-100 | 90-100 | 80-100 | 45-95 | 25-68 | 5-44 |
| ElA: | | | | | | | | | | | | |
| Elrose | 0-13 | Fine sandy loam | SM, SC-SM | A-2-4, A-4 | 0 | 0 | 85-100 | 65-100 | 55-95 | 25-50 | 16-25 | NP-7 |
| | 13-38 | Loam, clay loam, sandy clay loam | CL, SC | A-4, A-6 | 0 | 0 | 90-100 | 75-100 | 65-95 | 45-75 | 20-39 | 8-23 |
| | 38-80 | Clay loam, sandy clay, clay | CH, CL | A-6, A-7 | 0 | 0 | 90-100 | 75-100 | 65-100 | 50-85 | 32-55 | 13-27 |
| EtA: | | | | | | | | | | | | |
| Erno | 0-10 | Very fine sandy loam | SC-SM, ML, CL, CL-ML | A-4 | 0 | 0 | 100 | 100 | 90-100 | 50-65 | 15-30 | 2-10 |
| | 10-20 | Clay loam, loam, fine sandy loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 98-100 | 97-100 | 85-100 | 60-80 | 18-40 | 4-21 |
| | 20-80 | Loam, clay loam, fine sandy loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 98-100 | 97-100 | 80-100 | 55-75 | 20-40 | 5-21 |
| Thage | 0-8 | Fine sandy loam | SM, SC-SM, CL-ML, ML | A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 35-50 | 16-25 | NP-7 |
| | 8-34 | Loam, sandy clay loam, fine sandy loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-98 | 50-70 | 20-35 | 7-20 |
| | 34-80 | Clay loam, sandy clay loam, loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-98 | 55-75 | 20-35 | 7-20 |
| EyB: | | | | | | | | | | | | |
| Eylau | 0-16 | Very fine sandy loam | CL-ML, ML, SC-SM, SM | A-4 | 0 | 0 | 100 | 100 | 95-100 | 45-75 | 16-25 | NP-6 |
| | 16-38 | Clay loam, sandy clay loam, silty clay loam | CL | A-4, A-6 | 0 | 0 | 100 | 100 | 85-100 | 65-80 | 25-40 | 8-20 |
| | 38-48 | Clay loam, sandy clay loam, silty clay loam | CL | A-4, A-6 | 0 | 0 | 100 | 100 | 85-98 | 65-80 | 25-40 | 8-20 |
| | 48-80 | Clay loam, sandy clay loam, loam | SC, CL | A-4, A-6, A-7 | 0 | 0 | 100 | 100 | 85-98 | 45-80 | 25-45 | 8-25 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| GaA: | | | | | | | | | | | | |
| Gallime | 0-27 | Fine sandy loam | ML, SC, SM, CL | A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 35-50 | 15-28 | 3-10 |
| | 27-38 | Loam, fine sandy loam, very fine sandy loam | CL, ML, SC, SM | A-4 | 0 | 0 | 95-100 | 90-100 | 70-95 | 45-70 | 15-28 | 3-10 |
| | 38-80 | Sandy clay loam, clay loam, loam | CL, SC | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-95 | 40-60 | 25-40 | 8-20 |
| GaC: | | | | | | | | | | | | |
| Gallime | 0-21 | Fine sandy loam | CL-ML, SM, SC, ML, CL | A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 40-55 | 15-28 | 3-10 |
| | 21-43 | Loam, fine sandy loam, very fine sandy loam | CL-ML, CL, ML, SC, SM | A-4 | 0 | 0 | 95-100 | 90-100 | 75-95 | 45-60 | 15-28 | 3-10 |
| | 43-80 | Sandy clay loam, clay loam, loam | CL, SC, CL-ML | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-95 | 40-65 | 25-40 | 8-20 |
| Guyton | 0-8 | Silt loam | ML, CL-ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-100 | 0-27 | NP-7 |
| | 8-60 | Silty clay loam, silt loam, clay loam | CL-ML, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 90-100 | 85-100 | 22-40 | 6-18 |
| | 60-80 | Sandy clay loam, silt loam, silty clay loam | ML, CL-ML, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 90-100 | 60-90 | 0-40 | NP-18 |
| Gf: | | | | | | | | | | | | |
| Gladewater | 0-8 | Clay | CH, CL | A-7 | 0 | 0 | 100 | 100 | 90-100 | 80-95 | 48-75 | 25-50 |
| | 8-80 | Clay | CH | A-7 | 0 | 0 | 100 | 100 | 95-100 | 85-100 | 51-75 | 30-50 |
| HaA: | | | | | | | | | | | | |
| Hainesville | 0-24 | Fine sand | SM, SW-SM, SC-SM | A-2-4 | 0 | 0 | 98-100 | 95-100 | 85-100 | 10-30 | 0-25 | NP-5 |
| | 24-80 | Fine sand, loamy fine sand | SM, SC-SM | A-2-4, A-4 | 0 | 0 | 98-100 | 95-100 | 85-100 | 12-40 | 0-25 | NP-7 |
| Hb: | | | | | | | | | | | | |
| Hannahatchee | 0-15 | Fine sandy loam | CL, CL-ML, SC-SM | A-4, A-6 | 0 | 0 | 98-100 | 95-100 | 85-95 | 40-50 | 16-30 | 3-11 |
| | 15-29 | Loam, fine sandy loam, sandy clay loam | SC, CL-ML, CL | A-4, A-6 | 0 | 0 | 98-100 | 95-100 | 80-90 | 45-70 | 20-31 | 5-12 |
| | 29-80 | Sandy clay loam, loam, clay loam | CL, CL-ML, SC | A-4, A-6, A-7 | 0 | 0-3 | 97-100 | 80-100 | 65-95 | 40-60 | 23-43 | 7-18 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Fragments | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | >10 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| Iu: | | | | | | | | | | | | |
| Iulus | 0-8 | Fine sandy loam, very fine sandy loam | ML, CL-ML | A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 35-55 | 16-25 | NP-6 |
| | 8-53 | Fine sandy loam, loam | CL-ML, ML, SC-SM, SM | A-4 | 0 | 0 | 95-100 | 80-100 | 70-100 | 30-55 | 16-25 | NP-6 |
| | 53-80 | Fine sandy loam, loam, sandy clay loam | CL-ML, ML, SC, CL | A-4, A-6 | 0 | 0 | 95-100 | 85-100 | 75-100 | 30-60 | 16-32 | 3-15 |
| KiC: | | | | | | | | | | | | |
| Kirvin | 0-12 | Gravelly fine sandy loam | SC, GC-GM, GM, SM | A-2-4, A-4 | 0 | 0-5 | 70-90 | 38-90 | 35-90 | 15-50 | 0-30 | NP-8 |
| | 12-23 | Clay, sandy clay, clay loam | CL, CH | A-7 | 0 | 0-1 | 95-100 | 85-100 | 70-100 | 60-85 | 42-67 | 24-43 |
| | 23-43 | Clay loam, sandy clay loam, clay | CH, CL | A-6, A-7 | 0 | 0-1 | 95-100 | 85-100 | 75-100 | 55-80 | 32-59 | 16-32 |
| | 43-80 | Clay loam | SC, CH, CL | A-4, A-6, A-7 | 0 | 0-1 | 95-100 | 85-100 | 75-95 | 48-75 | 25-52 | 9-32 |
| KiD: | | | | | | | | | | | | |
| Kirvin | 0-6 | Sandy clay loam, loam, clay loam | CH, CL | A-6, A-7 | 0 | 0-2 | 95-100 | 85-100 | 65-95 | 36-60 | 32-52 | 16-32 |
| | 6-24 | Clay loam, sandy clay, clay | CH, CL | A-7 | 0 | 0-1 | 95-100 | 85-100 | 75-100 | 55-85 | 42-67 | 24-43 |
| | 24-47 | Clay loam, sandy clay loam, clay | CL, CH | A-6, A-7 | 0 | 0-1 | 95-100 | 85-100 | 75-100 | 55-80 | 32-59 | 16-32 |
| | 47-80 | Stratified sandy clay loam | CH, CL, SC | A-4, A-6, A-7 | 0 | 0-1 | 95-100 | 85-100 | 70-95 | 38-60 | 25-52 | 9-32 |
| KrC: | | | | | | | | | | | | |
| Kirvin | 0-6 | Very fine sandy loam, fine sandy loam | SM, SC, ML, CL | A-4 | 0 | 0-2 | 95-100 | 90-100 | 80-100 | 45-65 | 0-30 | NP-8 |
| | 6-43 | Clay, clay loam, sandy clay | CH, CL | A-7 | 0 | 0-1 | 95-100 | 85-100 | 70-100 | 60-90 | 42-67 | 24-43 |
| | 43-51 | Clay loam, sandy clay loam, clay | CL, CH | A-6, A-7 | 0 | 0-1 | 95-100 | 85-100 | 75-100 | 55-80 | 32-59 | 16-32 |
| | 51-80 | Clay loam | CL, SC, CH | A-4, A-6, A-7 | 0 | 0-1 | 95-100 | 85-100 | 75-95 | 48-75 | 25-52 | 9-32 |
| KuA: | | | | | | | | | | | | |
| Kullit | 0-13 | Very fine sandy loam, fine sandy loam, loam | ML, SM, SC-SM, CL-ML | A-4 | 0 | 0 | 100 | 98-100 | 90-100 | 45-65 | 15-26 | NP-7 |
| | 13-49 | Clay loam, loam, sandy clay loam | CL | A-4, A-6 | 0 | 0 | 100 | 98-100 | 80-100 | 55-75 | 25-40 | 8-21 |
| | 49-80 | Clay, sandy clay | CL, CH | A-7-6 | 0 | 0 | 100 | 98-100 | 80-95 | 60-75 | 44-71 | 20-42 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Fragments | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Unified | AASHTO | >10 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| LcB: | | | | | | | | | | | | |
| Latch | 0-7 | Loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 20-36 | 0-25 | NP-6 |
| | 7-54 | Loamy fine sand, fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 25-36 | 0-25 | NP-6 |
| | 54-75 | Sandy clay loam, loam, fine sandy loam | CL, SC | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-95 | 40-55 | 25-39 | 7-20 |
| | 75-80 | Loamy fine sand, fine sand, sand | SC-SM, SM, SP-SM | A-2-4, A-3 | 0 | 0 | 95-100 | 90-100 | 80-100 | 10-40 | 0-22 | NP-6 |
| LmB: | | | | | | | | | | | | |
| Latch | 0-5 | Loamy fine sand | SM, SC-SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 10-36 | 0-25 | NP-6 |
| | 5-56 | Fine sand, loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 85-100 | 10-36 | 0-25 | NP-6 |
| | 56-80 | Sandy clay loam, loam, fine sandy loam | CL, SC | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 70-95 | 38-60 | 25-39 | 7-20 |
| Mollville | 0-17 | Loam | CL, CL-ML, ML | A-4, A-6 | 0 | 0 | 100 | 100 | 85-95 | 60-70 | 20-35 | 3-15 |
| | 17-28 | Loam, sandy clay loam, clay loam | SC, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 85-100 | 45-80 | 25-40 | 8-22 |
| | 28-69 | Sandy clay loam, clay loam, loam | SC, CL | A-6 | 0 | 0 | 100 | 100 | 80-95 | 45-65 | 30-40 | 11-20 |
| | 69-80 | Fine sandy loam, loamy fine sand | SM, ML, SC-SM, CL-ML | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 75-100 | 30-50 | 0-25 | NP-6 |
| LtB: | | | | | | | | | | | | |
| Latex | 0-12 | Fine sandy loam | SC-SM, SC, CL-ML, SM | A-4 | 0 | 0 | 98-100 | 95-100 | 75-95 | 35-55 | 19-30 | 2-9 |
| | 12-28 | Sandy clay loam, loam, clay loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 98-100 | 90-100 | 75-95 | 40-60 | 20-40 | 6-25 |
| | 28-38 | Sandy clay loam, loam, clay loam | CL, SC, SC-SM, CL-ML | A-4, A-6 | 0 | 0-1 | 80-100 | 60-100 | 50-95 | 30-60 | 20-40 | 6-25 |
| | 38-72 | Clay, silty clay, clay loam | CH, CL | A-7-6 | 0 | 0 | 98-100 | 95-100 | 85-100 | 70-95 | 41-70 | 20-43 |
| | 72-80 | Silt loam | CL, CL-ML, SC, SC-SM | A-4, A-6 | 0 | 0 | 98-100 | 95-100 | 80-100 | 45-90 | 20-40 | 6-25 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| LuC: | | | | | | | | | | | | |
| Lilbert---------- | 0-7 | Loamy fine sand | SM | A-4, A-2-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 20-36 | 0-20 | NP-3 |
| | 7-33 | Loamy fine sand | SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 25-36 | 0-20 | NP-3 |
| | 33-41 | Sandy clay loam, fine sandy loam | SC, CL | A-4, A-6 | 0 | 0 | 95-100 | 90-100 | 75-95 | 35-55 | 23-39 | 8-22 |
| | 41-80 | Sandy clay loam, fine sandy loam, clay loam | CL, SC | A-4, A-6 | 0 | 0 | 90-100 | 85-100 | 70-95 | 35-55 | 22-39 | 8-20 |
| Mf: | | | | | | | | | | | | |
| Mantachie-------- | 0-29 | Loam | SM, SC-SM, ML, CL-ML | A-4 | 0 | 0-5 | 95-100 | 85-100 | 70-95 | 48-70 | 15-20 | NP-5 |
| | 29-80 | Loam, clay loam, sandy clay loam | CL, SC-SM, SC, CL-ML | A-4, A-6 | 0 | 0-5 | 95-100 | 85-100 | 70-100 | 48-75 | 20-40 | 5-15 |
| MiA: | | | | | | | | | | | | |
| Metcalf---------- | 0-4 | Silt loam | CL-ML, ML, CL | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-100 | 19-36 | 3-15 |
| | 4-31 | Silt loam, loam, clay loam | CL | A-6 | 0 | 0 | 100 | 100 | 90-100 | 75-100 | 27-38 | 12-19 |
| | 31-80 | Silty clay, clay, clay loam | CH, CL | A-7-6 | 0 | 0 | 100 | 100 | 95-100 | 90-100 | 49-69 | 29-44 |
| MkA: | | | | | | | | | | | | |
| Mollville-------- | 0-14 | Loam | CL, CL-ML, ML | A-4, A-6 | 0 | 0 | 100 | 100 | 85-95 | 60-70 | 20-35 | 3-15 |
| | 14-34 | Clay loam, sandy clay loam, loam | SC, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 85-100 | 45-80 | 25-40 | 8-22 |
| | 34-63 | Clay loam, sandy clay loam, loam | CL, SC | A-6 | 0 | 0 | 100 | 100 | 85-100 | 45-80 | 30-40 | 11-20 |
| | 63-80 | Loamy fine sand, fine sandy loam | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 85-100 | 20-36 | 0-25 | NP-6 |
| Kildare---------- | 0-14 | Silt loam | CL-ML, ML, SC-SM, SM | A-4 | 0 | 0 | 95-100 | 95-100 | 70-85 | 40-60 | 16-25 | NP-7 |
| | 14-30 | Clay loam, loam, sandy clay loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 95-100 | 95-100 | 85-95 | 51-70 | 20-35 | 7-20 |
| | 30-45 | Clay loam, fine sandy loam, loam | CL-ML, CL | A-4, A-6 | 0 | 0 | 95-100 | 95-100 | 85-95 | 51-70 | 20-35 | 7-20 |
| | 45-80 | Loamy fine sand, fine sandy loam, silt loam, fine sand | CL-ML, ML, SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 95-100 | 70-95 | 15-68 | 0-25 | NP-6 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| MlA: | | | | | | | | | | | | |
| Mollville------- | 0-9 | Loam | ML, CL-ML, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 85-95 | 60-70 | 20-35 | 3-15 |
| | 9-57 | Clay loam, loam, sandy clay loam | CL, SC | A-4, A-6 | 0 | 0 | 100 | 100 | 85-100 | 45-80 | 25-40 | 8-22 |
| | 57-65 | Sandy clay loam, clay loam, loam | CL, SC | A-6 | 0 | 0 | 100 | 100 | 80-95 | 45-65 | 30-40 | 11-20 |
| | 65-80 | Fine sandy loam, loamy fine sand | SC-SM, SM, ML, CL-ML | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 75-100 | 30-50 | 0-25 | NP-6 |
| Mm: | | | | | | | | | | | | |
| Mooreville------ | 0-9 | Silt loam, loam | CL, CL-ML | A-4 | 0 | 0 | 100 | 100 | 85-100 | 65-85 | 20-30 | 5-10 |
| | 9-57 | Sandy clay loam, clay loam, loam | SC, CL | A-6, A-7 | 0 | 0 | 100 | 100 | 85-95 | 45-60 | 28-50 | 15-30 |
| | 57-80 | Fine sandy loam, loam, sandy clay loam, clay loam | SC, CL | A-6, A-7 | 0 | 0 | 100 | 100 | 90-100 | 35-50 | 28-50 | 15-30 |
| Mantachie------- | 0-8 | Loam | CL, CL-ML | A-4, A-6 | 0 | 0-5 | 95-100 | 85-100 | 75-95 | 55-75 | 20-40 | 5-15 |
| | 8-17 | Loam, clay loam | CL, CL-ML | A-4, A-6 | 0 | 0-5 | 95-100 | 85-100 | 75-95 | 55-75 | 20-40 | 5-15 |
| | 17-29 | Loam, clay loam | CL-ML, CL | A-4, A-6 | 0 | 0-5 | 95-100 | 85-100 | 75-95 | 55-75 | 20-40 | 5-15 |
| | 29-80 | Clay loam, loam, sandy clay loam | CL, SC, SC-SM, CL-ML | A-4, A-6 | 0 | 0-5 | 95-100 | 85-100 | 70-95 | 48-75 | 20-40 | 5-15 |
| RgC: | | | | | | | | | | | | |
| Redsprings------ | 0-6 | Gravelly fine sandy loam | CL, CL-ML, SC, SC-SM | A-2-4, A-2-7, A-4 | 0-1 | 0-5 | 85-95 | 60-95 | 50-90 | 20-50 | 20-42 | 4-20 |
| | 6-44 | Clay loam, clay | CL, CH | A-7-6 | 0 | 0-1 | 85-100 | 65-100 | 60-100 | 50-85 | 41-60 | 18-35 |
| | 44-80 | Sandy clay loam | CL, SC, CH | A-4, A-6, A-7-6 | 0 | 0-6 | 90-100 | 70-100 | 60-95 | 35-60 | 25-57 | 9-31 |
| RnB: | | | | | | | | | | | | |
| Rentzel--------- | 0-11 | Loamy fine sand | SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 20-36 | 0-30 | NP-4 |
| | 11-25 | Loamy fine sand | SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 85-100 | 25-36 | 0-30 | NP-4 |
| | 25-80 | Sandy clay loam, fine sandy loam | CL-ML, CL, SC, SC-SM | A-4, A-6, A-7 | 0 | 0 | 95-100 | 85-100 | 70-95 | 35-60 | 20-43 | 4-22 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| SaC: | | | | | | | | | | | | |
| Sacul----------- | 0-11 | Very fine sandy loam | SC-SM, SC, CL-ML, CL | A-4 | 0 | 0 | 80-100 | 60-100 | 60-100 | 38-75 | 15-30 | 4-10 |
| | 11-31 | Clay, silty clay, clay loam | SC, CL, CH | A-7 | 0 | 0 | 85-100 | 70-100 | 60-100 | 48-90 | 45-70 | 20-40 |
| | 31-45 | Clay loam, silty clay loam, loam | SC, CL | A-2, A-4, A-6, A-7 | 0 | 0 | 85-100 | 70-100 | 60-100 | 35-85 | 25-48 | 8-25 |
| | 45-80 | Fine sandy loam, very fine sandy loam, loamy fine sand | CL-ML, SM, SC-SM, ML | A-1, A-2, A-4 | 0 | 0 | 80-100 | 65-100 | 50-100 | 25-55 | 15-30 | NP-10 |
| SlC: | | | | | | | | | | | | |
| Sailes---------- | 0-6 | Fine sandy loam | ML, SM | A-2-4, A-4 | 0 | 0 | 90-100 | 70-100 | 65-100 | 30-50 | 15-20 | NP-3 |
| | 6-72 | Sandy clay loam, loam, clay loam | CL, SC | A-4, A-6 | 0 | 0 | 90-100 | 70-100 | 60-95 | 30-60 | 22-35 | 8-15 |
| | 72-80 | Sandy clay loam, loam, clay loam | SC, CL | A-4, A-6 | 0 | 0 | 90-100 | 70-100 | 60-95 | 30-60 | 22-35 | 8-15 |
| Sm: | | | | | | | | | | | | |
| Sardis---------- | 0-5 | Loam | CL-ML, ML, CL | A-4 | 0 | 0 | 100 | 100 | 90-100 | 70-85 | 0-30 | NP-10 |
| | 5-51 | Silt loam, silty clay loam, clay loam | CL-ML, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 90-100 | 75-95 | 25-40 | 5-20 |
| | 51-80 | Sandy loam, loam, silt loam | CL, CL-ML, SC, SM | A-2, A-4 | 0 | 0 | 100 | 95-100 | 65-85 | 30-50 | 0-30 | NP-10 |
| Manco----------- | 0-6 | Silt loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | 4-11 |
| | 6-48 | Silt loam, loam, clay loam | CL | A-4, A-6 | 0 | 0 | 100 | 100 | 90-100 | 85-100 | 28-39 | 9-18 |
| | 48-80 | Silt loam, loam, clay loam | CL | A-6, A-7-6, A-4 | 0 | 0 | 100 | 100 | 90-100 | 85-100 | 28-43 | 9-21 |
| So: | | | | | | | | | | | | |
| Socagee--------- | 0-5 | Silty clay loam | CL | A-6, A-7 | 0 | 0 | 100 | 100 | 95-100 | 90-100 | 35-48 | 15-25 |
| | 5-60 | Clay loam, silt loam, silty clay loam | CL-ML, CL | A-4, A-6, A-7 | 0 | 0 | 100 | 100 | 90-100 | 75-100 | 25-48 | 6-25 |
| | 60-80 | Silty clay loam, loam, clay loam | CL-ML, CL | A-4, A-6, A-7 | 0 | 0 | 100 | 100 | 95-100 | 85-100 | 25-48 | 6-25 |

Table 28.--Engineering Properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification: Unified | Classification: AASHTO | Fragments: >10 inches | Fragments: 3-10 inches | Percentage passing sieve number--: 4 | 10 | 40 | 200 | Liquid limit | Plasticity index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | | | Pct | Pct | | | | | Pct | |
| TnB: | | | | | | | | | | | | |
| Tenaha---------- | 0-7 | Loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 25-36 | 0-28 | NP-10 |
| | 7-23 | Loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 75-100 | 70-100 | 20-36 | 0-27 | NP-10 |
| | 23-41 | Sandy clay loam, fine sandy loam, clay loam | CL, SC | A-4, A-6, A-7-6 | 0 | 0 | 95-100 | 90-100 | 70-95 | 35-55 | 29-44 | 10-25 |
| | 41-80 | Sandy clay loam | CL, SC | A-2-6, A-6, A-7 | 0-1 | 0-3 | 90-100 | 80-100 | 65-95 | 35-60 | 29-49 | 13-28 |
| TnD: | | | | | | | | | | | | |
| Tenaha---------- | 0-3 | Loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 90-100 | 80-100 | 25-36 | 16-20 | NP-4 |
| | 3-24 | Loamy fine sand | SC-SM, SM | A-2-4, A-4 | 0 | 0 | 95-100 | 75-100 | 70-100 | 20-36 | 16-20 | NP-4 |
| | 24-55 | Sandy clay loam, fine sandy loam, clay loam | CL, SC | A-4, A-6, A-7-6 | 0 | 0 | 95-100 | 90-100 | 70-95 | 35-55 | 25-46 | 8-26 |
| | 55-80 | Sandy clay loam | CL, SC | A-2-6, A-6, A-7 | 0-1 | 0-3 | 90-100 | 80-100 | 65-95 | 35-60 | 25-45 | 11-26 |
| Ud: | | | | | | | | | | | | |
| Udorthents, gravelly------- | 0-80 | Gravelly fine sandy loam, variable | GC, GC-GM | A-2-4, A-2-6 | 0-20 | 0-20 | 75-100 | 65-95 | 60-95 | 30-65 | 20-30 | 6-13 |
| WrA: | | | | | | | | | | | | |
| Wrightsville---- | 0-11 | Silt loam | ML, CL-ML, CL | A-4 | 0 | 0 | 100 | 95-100 | 85-100 | 65-85 | 0-30 | 3-10 |
| | 11-35 | Silty clay loam, silty clay, clay | CH, CL, MH, ML | A-6, A-7 | 0 | 0 | 100 | 100 | 85-100 | 80-95 | 39-60 | 15-25 |
| | 35-80 | Silty clay loam, silty clay, silt loam | CL | A-4, A-6, A-7 | 0 | 0 | 100 | 95-100 | 85-100 | 70-95 | 25-50 | 8-25 |

Table 29.--Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea- bility (Ksat) | Available water capacity | Linear extensi- bility | Organic matter | Erosion factors | | | Wind erodi- bility group | Wind erodi- bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Kw | Kf | T | | |
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| AaB: | | | | | | | | | | | | |
| Alazan | 0-3 | 5-15 | 1.40-1.65 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-2.0 | .32 | .32 | 5 | 3 | 86 |
| | 3-12 | 5-15 | 1.40-1.65 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-1.5 | .32 | .32 | | | |
| | 12-20 | 18-30 | 1.45-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| | 20-26 | 18-34 | 1.45-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| | 26-75 | 18-34 | 1.45-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| | 75-80 | 18-34 | 1.45-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| AsA: | | | | | | | | | | | | |
| Ashford | 0-3 | 40-50 | 1.35-1.55 | 0.06-0.2 | 0.14-0.18 | 6.0-8.9 | 0.5-2.0 | .32 | .32 | 5 | 4 | 86 |
| | 3-58 | 60-75 | 1.30-1.50 | 0.00-0.06 | 0.08-0.14 | 9.0-25.0 | 0.1-2.0 | .32 | .32 | | | |
| | 58-75 | 50-75 | 1.35-1.55 | 0.00-0.06 | 0.07-0.14 | 9.0-25.0 | 0.1-1.0 | .32 | .32 | | | |
| | 75-80 | 40-65 | 1.35-1.55 | 0.00-0.06 | 0.07-0.14 | 9.0-25.0 | 0.1-1.0 | .32 | .32 | | | |
| BaB: | | | | | | | | | | | | |
| Bernaldo | 0-9 | 3-15 | 1.30-1.50 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-2.0 | .28 | .28 | 5 | 3 | 86 |
| | 9-18 | 3-15 | 1.30-1.50 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| | 18-31 | 15-30 | 1.40-1.65 | 0.6-2 | 0.13-0.18 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| | 31-80 | 10-30 | 1.45-1.65 | 0.6-2 | 0.13-0.18 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| BaD: | | | | | | | | | | | | |
| Bernaldo | 0-4 | 3-15 | 1.30-1.50 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-2.0 | .28 | .28 | 5 | 3 | 86 |
| | 4-18 | 3-15 | 1.30-1.50 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| | 18-46 | 15-30 | 1.40-1.65 | 0.6-2 | 0.13-0.18 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| | 46-80 | 10-30 | 1.45-1.65 | 0.6-2 | 0.13-0.18 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| Bg: | | | | | | | | | | | | |
| Bibb | 0-12 | 2-18 | 1.50-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 1.0-3.0 | .17 | .20 | 5 | 3 | 86 |
| | 12-80 | 2-18 | 1.50-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 1.0-3.0 | .17 | .20 | | | |
| BoC: | | | | | | | | | | | | |
| Bowie | 0-10 | 3-15 | 1.40-1.69 | 2-6 | 0.10-0.15 | 0.0-2.9 | 0.5-1.0 | .32 | .32 | 5 | 3 | 86 |
| | 10-27 | 18-35 | 1.60-1.69 | 0.6-2 | 0.10-0.16 | 0.0-2.9 | 0.1-1.0 | .28 | .32 | | | |
| | 27-73 | 18-35 | 1.60-1.80 | 0.2-0.6 | 0.10-0.16 | 0.0-2.9 | 0.1-1.0 | .28 | .32 | | | |
| | 73-80 | 25-40 | 1.65-1.80 | 0.2-0.6 | 0.10-0.16 | 3.0-5.9 | 0.1-1.0 | .32 | .32 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea- bility (Ksat) | Available water capacity | Linear extensi- bility | Organic matter | Erosion factors | | | Wind erodi- bility group | Wind erodi- bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Kw | Kf | T | | |
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| BrB: | | | | | | | | | | | | |
| Briley---------------- | 0-10 | 5-18 | 1.50-1.65 | 6-20 | 0.05-0.09 | 0.0-2.9 | 0.5-2.0 | .20 | .20 | 5 | 2 | 134 |
| | 10-22 | 5-18 | 1.50-1.65 | 6-20 | 0.05-0.09 | 0.0-2.9 | 0.1-1.0 | .20 | .20 | | | |
| | 22-80 | 15-35 | 1.55-1.69 | 0.6-2 | 0.10-0.16 | 0.0-2.9 | 0.1-1.0 | .24 | .24 | | | |
| CrF: | | | | | | | | | | | | |
| Cuthbert------------- | 0-13 | 2-15 | 1.20-1.40 | 2-6 | 0.09-0.12 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 3 | 3 | 86 |
| | 13-27 | 30-60 | 1.24-1.45 | 0.2-0.6 | 0.10-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 27-31 | 15-50 | 1.35-1.60 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| | 31-80 | 20-35 | 1.40-1.65 | 0.06-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| Redsprings---------- | 0-9 | 2-15 | 1.35-1.55 | 0.6-2 | 0.07-0.11 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 4 | 8 | 0 |
| | 9-44 | 35-60 | 1.30-1.45 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| | 44-53 | 25-55 | 1.30-1.50 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| | 53-80 | 20-35 | 1.40-1.60 | 0.06-0.2 | 0.08-0.14 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| CrG: | | | | | | | | | | | | |
| Cuthbert------------- | 0-13 | 2-15 | 1.20-1.40 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.5-2.0 | .20 | .28 | 3 | 8 | 0 |
| | 13-21 | 30-60 | 1.24-1.45 | 0.2-0.6 | 0.10-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 21-35 | 15-50 | 1.35-1.60 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| | 35-80 | 20-35 | 1.40-1.65 | 0.06-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| Redsprings---------- | 0-6 | 2-15 | 1.35-1.55 | 0.6-2 | 0.07-0.11 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 4 | 8 | 0 |
| | 6-33 | 35-60 | 1.30-1.45 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| | 33-41 | 35-55 | 1.30-1.50 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| | 41-80 | 20-35 | 1.40-1.60 | 0.06-0.2 | 0.08-0.14 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| CtE: | | | | | | | | | | | | |
| Cuthbert------------- | 0-9 | 2-15 | 1.20-1.40 | 2-6 | 0.09-0.12 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 3 | 3 | 86 |
| | 9-24 | 25-60 | 1.24-1.45 | 0.2-0.6 | 0.10-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 24-31 | 15-50 | 1.35-1.60 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| | 31-80 | 20-35 | 1.40-1.65 | 0.06-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| CuE: | | | | | | | | | | | | |
| Cuthbert------------- | 0-9 | 2-15 | 1.20-1.40 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.5-2.0 | .20 | .28 | 3 | 8 | 0 |
| | 9-30 | 30-60 | 1.24-1.45 | 0.2-0.6 | 0.10-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 30-35 | 15-50 | 1.35-1.60 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |
| | 35-80 | 20-35 | 1.40-1.65 | 0.06-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea-bility (Ksat) | Available water capacity | Linear extensi-bility | Organic matter | Erosion factors Kw | Erosion factors Kf | Erosion factors T | Wind erodi-bility group | Wind erodi-bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| Cy: | | | | | | | | | | | | |
| Cypress | 0-3 | 25-40 | 1.40-1.70 | 0.00-0.06 | 0.15-0.20 | 3.0-5.9 | 2.0-5.0 | .32 | .32 | 1 | 4 | 86 |
| | 3-80 | 35-60 | 1.10-1.50 | 0.00-0.06 | 0.12-0.20 | 3.0-5.9 | 0.4-5.0 | .32 | .32 | | | |
| DaB: | | | | | | | | | | | | |
| Darco | 0-10 | 3-15 | 1.35-1.55 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-1.0 | .17 | .17 | 5 | 2 | 134 |
| | 10-62 | 3-15 | 1.60-1.85 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-1.0 | .17 | .17 | | | |
| | 62-74 | 12-35 | 1.40-1.65 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.5-1.0 | .24 | .24 | | | |
| | 74-80 | 12-35 | 1.40-1.65 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.5-1.0 | .24 | .24 | | | |
| DaE: | | | | | | | | | | | | |
| Darco | 0-9 | 3-15 | 1.35-1.55 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-1.0 | .17 | .17 | 5 | 2 | 134 |
| | 9-59 | 3-15 | 1.60-1.85 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-1.0 | .17 | .17 | | | |
| | 59-80 | 12-35 | 1.40-1.65 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.5-1.0 | .24 | .24 | | | |
| DuA: | | | | | | | | | | | | |
| Duffern | 0-4 | 2-8 | 1.35-1.50 | 6-20 | 0.05-0.09 | 0.0-2.9 | 0.5-1.0 | .15 | .15 | 5 | 1 | 220 |
| | 4-43 | 2-8 | 1.40-1.55 | 6-20 | 0.02-0.09 | 0.0-2.9 | 0.0-0.5 | .15 | .15 | | | |
| | 43-80 | 5-10 | 1.45-1.60 | 6-20 | 0.05-0.09 | 0.0-2.9 | 0.0-0.5 | .15 | .15 | | | |
| EeB: | | | | | | | | | | | | |
| Eastwood | 0-10 | 3-18 | 1.20-1.60 | 0.6-2 | 0.13-0.20 | 0.0-2.9 | 0.5-1.0 | .49 | .49 | 4 | 3 | 86 |
| | 10-70 | 40-65 | 1.20-1.45 | 0.00-0.06 | 0.12-0.18 | 6.0-8.9 | 0.5-1.0 | .32 | .32 | | | |
| | 70-80 | 15-35 | 1.35-1.65 | 0.06-0.2 | 0.10-0.15 | 3.0-5.9 | 0.5-1.0 | .37 | .37 | | | |
| EeD: | | | | | | | | | | | | |
| Eastwood | 0-5 | 3-18 | 1.20-1.60 | 0.6-2 | 0.13-0.20 | 0.0-2.9 | 0.5-1.0 | .49 | .49 | 4 | 3 | 86 |
| | 5-47 | 40-65 | 1.20-1.45 | 0.00-0.06 | 0.12-0.18 | 6.0-8.9 | 0.5-1.0 | .32 | .32 | | | |
| | 47-57 | 25-40 | 1.20-1.50 | 0.06-0.2 | 0.12-0.20 | 6.0-8.9 | 0.5-1.0 | .32 | .32 | | | |
| | 57-80 | 15-35 | 1.35-1.65 | 0.06-0.2 | 0.10-0.15 | 3.0-5.9 | 0.5-1.0 | .37 | .37 | | | |
| ElA: | | | | | | | | | | | | |
| Elrose | 0-13 | 2-15 | 1.25-1.40 | 2-6 | 0.11-0.15 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 5 | 3 | 86 |
| | 13-38 | 15-31 | 1.30-1.55 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.1-0.5 | .28 | .32 | | | |
| | 38-80 | 27-55 | 1.35-1.65 | 0.6-2 | 0.11-0.16 | 3.0-5.9 | 0.1-0.5 | .28 | .32 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea-bility (Ksat) | Available water capacity | Linear extensi-bility | Organic matter | Erosion factors Kw | Erosion factors Kf | Erosion factors T | Wind erodi-bility group | Wind erodi-bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| EtA: | | | | | | | | | | | | |
| Erno | 0-10 | 8-18 | 1.40-1.63 | 2-6 | 0.15-0.18 | 0.0-2.9 | 0.5-1.0 | .49 | .49 | 3 | 5 | 56 |
| | 10-20 | 18-35 | 1.50-1.75 | 0.6-2 | 0.15-0.20 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| | 20-80 | 12-33 | 1.50-1.75 | 0.06-0.2 | 0.08-0.12 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| Thage | 0-8 | 10-20 | 1.40-1.60 | 2-6 | 0.11-0.15 | 0.0-2.9 | 0.2-2.0 | .37 | .37 | 4 | 3 | 86 |
| | 8-34 | 18-30 | 1.45-1.65 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.1-1.0 | .43 | .43 | | | |
| | 34-80 | 20-35 | 1.50-1.80 | 0.2-0.6 | 0.07-0.14 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| EyB: | | | | | | | | | | | | |
| Eylau | 0-16 | 10-24 | 1.35-1.65 | 2-6 | 0.12-0.16 | 0.0-2.9 | 0.5-1.0 | .28 | .28 | 5 | 3 | 86 |
| | 16-38 | 20-35 | 1.35-1.65 | 0.6-2 | 0.14-0.20 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | | | |
| | 38-48 | 20-30 | 1.50-1.70 | 0.2-0.6 | 0.10-0.14 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | | | |
| | 48-80 | 15-30 | 1.50-1.75 | 0.6-2 | 0.10-0.14 | 0.0-2.9 | 0.2-1.0 | .37 | .37 | | | |
| GaA: | | | | | | | | | | | | |
| Gallime | 0-27 | 10-20 | 1.30-1.40 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-2.0 | .32 | .32 | 5 | 3 | 86 |
| | 27-38 | 10-20 | 1.35-1.50 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.3-1.0 | .32 | .32 | | | |
| | 38-80 | 18-35 | 1.40-1.65 | 0.6-2 | 0.13-0.18 | 3.0-5.9 | 0.1-1.0 | .32 | .32 | | | |
| GaC: | | | | | | | | | | | | |
| Gallime | 0-21 | 10-20 | 1.30-1.40 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-2.0 | .32 | .32 | 5 | 3 | 86 |
| | 21-43 | 10-20 | 1.35-1.50 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.3-1.0 | .32 | .32 | | | |
| | 43-80 | 18-35 | 1.40-1.65 | 0.6-2 | 0.13-0.18 | 3.0-5.9 | 0.1-1.0 | .32 | .32 | | | |
| Guyton | 0-8 | 7-25 | 1.35-1.65 | 0.6-2 | 0.20-0.23 | 0.0-2.9 | 0.5-4.0 | .43 | .43 | 5 | 5 | 56 |
| | 8-60 | 20-35 | 1.35-1.70 | 0.06-0.2 | 0.15-0.22 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | | | |
| | 60-80 | 20-35 | 1.35-1.70 | 0.06-0.2 | 0.15-0.22 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | | | |
| Gf: | | | | | | | | | | | | |
| Gladewater | 0-8 | 50-75 | 1.20-1.40 | 0.06-0.2 | 0.15-0.20 | 9.0-25.0 | 1.0-3.0 | .32 | .32 | 5 | 4 | 86 |
| | 8-80 | 60-75 | 1.20-1.40 | 0.00-0.06 | 0.15-0.18 | 9.0-25.0 | 0.1-1.0 | .32 | .32 | | | |
| HaA: | | | | | | | | | | | | |
| Hainesville | 0-24 | 1-4 | 1.50-1.70 | 6-20 | 0.04-0.07 | 0.0-2.9 | 0.5-2.0 | .17 | .17 | 5 | 1 | 220 |
| | 24-80 | 2-10 | 1.50-1.70 | 6-20 | 0.04-0.10 | 0.0-2.9 | 0.5-1.0 | .20 | .20 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea- bility (Ksat) | Available water capacity | Linear extensi- bility | Organic matter | Erosion factors | | | Wind erodi- bility group | Wind erodi- bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Kw | Kf | T | | |
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| Hb: | | | | | | | | | | | | |
| Hannahatchee-------- | 0-15 | 10-20 | 1.30-1.65 | 2-6 | 0.10-0.15 | 0.0-2.9 | 0.5-2.0 | .32 | .32 | 5 | 3 | 86 |
| | 15-29 | 15-25 | 1.40-1.60 | 0.6-2 | 0.12-0.17 | 0.0-2.9 | 0.5-1.0 | .32 | .32 | | | |
| | 29-80 | 18-35 | 1.40-1.55 | 0.6-2 | 0.12-0.17 | 0.0-2.9 | 0.5-1.0 | .28 | .32 | | | |
| Iu: | | | | | | | | | | | | |
| Iulus--------------- | 0-8 | 6-15 | 1.20-1.40 | 0.6-2 | 0.11-0.18 | 0.0-2.9 | 0.5-2.0 | .37 | .37 | 5 | 5 | 56 |
| | 8-53 | 6-20 | 1.26-1.45 | 0.6-2 | 0.11-0.18 | 0.0-2.9 | 0.1-1.0 | .28 | .32 | | | |
| | 53-80 | 10-28 | 1.30-1.50 | 0.6-2 | 0.11-0.18 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |
| KiC: | | | | | | | | | | | | |
| Kirvin-------------- | 0-12 | 2-15 | 1.20-1.40 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.5-2.0 | .20 | .37 | 4 | 8 | 0 |
| | 12-23 | 35-60 | 1.24-1.45 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 23-43 | 25-50 | 1.35-1.60 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 43-80 | 28-40 | 1.40-1.65 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| KiD: | | | | | | | | | | | | |
| Kirvin-------------- | 0-6 | 20-40 | 1.20-1.40 | 0.2-0.6 | 0.12-0.15 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | 4 | 3 | 86 |
| | 6-24 | 35-60 | 1.24-1.45 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 24-47 | 25-50 | 1.35-1.60 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 47-80 | 20-45 | 1.40-1.65 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| KrC: | | | | | | | | | | | | |
| Kirvin-------------- | 0-6 | 2-15 | 1.20-1.40 | 2-6 | 0.09-0.12 | 0.0-2.9 | 0.5-2.0 | .37 | .37 | 4 | 3 | 86 |
| | 6-43 | 35-60 | 1.24-1.45 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 43-51 | 25-50 | 1.35-1.60 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 51-80 | 28-40 | 1.40-1.65 | 0.2-0.6 | 0.08-0.14 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| KuA: | | | | | | | | | | | | |
| Kullit-------------- | 0-13 | 10-18 | 1.30-1.60 | 2-6 | 0.11-0.15 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | 5 | 3 | 86 |
| | 13-49 | 18-35 | 1.35-1.60 | 0.6-2 | 0.11-0.15 | 0.0-2.9 | 0.0-0.5 | .32 | .32 | | | |
| | 49-80 | 35-50 | 1.35-1.65 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.0-0.5 | .28 | .28 | | | |
| LcB: | | | | | | | | | | | | |
| Latch--------------- | 0-7 | 3-12 | 1.50-1.65 | 6-20 | 0.05-0.11 | 0.0-2.9 | 1.0-2.0 | .17 | .17 | 5 | 2 | 134 |
| | 7-54 | 3-12 | 1.50-1.65 | 6-20 | 0.05-0.11 | 0.0-2.9 | 0.5-1.0 | .17 | .17 | | | |
| | 54-75 | 18-35 | 1.55-1.70 | 0.6-2 | 0.12-0.17 | 0.0-2.9 | 0.0-0.5 | .24 | .24 | | | |
| | 75-80 | 2-10 | 1.50-1.70 | 6-20 | 0.05-0.11 | 0.0-2.9 | 0.0-0.5 | .17 | .17 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea-bility (Ksat) | Available water capacity | Linear extensi-bility | Organic matter | Erosion factors | | | Wind erodi-bility group | Wind erodi-bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Kw | Kf | T | | |
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| LmB: | | | | | | | | | | | | |
| Latch | 0-5 | 3-12 | 1.50-1.65 | 6-20 | 0.05-0.11 | 0.0-2.9 | 1.0-2.0 | .17 | .17 | 5 | 2 | 134 |
| | 5-56 | 3-12 | 1.50-1.65 | 6-20 | 0.05-0.11 | 0.0-2.9 | 0.5-1.0 | .17 | .17 | | | |
| | 56-80 | 18-35 | 1.55-1.70 | 0.6-2 | 0.12-0.17 | 0.0-2.9 | 0.0-0.5 | .24 | .24 | | | |
| Mollville | 0-17 | 16-20 | 1.40-1.65 | 0.2-0.6 | 0.15-0.20 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | 5 | 5 | 56 |
| | 17-28 | 20-35 | 1.50-1.69 | 0.06-0.2 | 0.12-0.17 | 3.0-5.9 | 0.0-0.5 | .32 | .32 | | | |
| | 28-69 | 15-35 | 1.50-1.69 | 0.06-0.2 | 0.15-0.20 | 3.0-5.9 | 0.0-0.5 | .32 | .32 | | | |
| | 69-80 | 3-12 | 1.50-1.65 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.0-0.5 | .20 | .20 | | | |
| LtB: | | | | | | | | | | | | |
| Latex | 0-12 | 2-18 | 1.28-1.45 | 2-6 | 0.11-0.16 | 0.0-2.9 | 0.5-2.0 | .37 | .37 | 5 | 3 | 86 |
| | 12-28 | 18-35 | 1.28-1.45 | 0.6-2 | 0.11-0.18 | 3.0-5.9 | 0.1-1.0 | .32 | .32 | | | |
| | 28-38 | 18-35 | 1.30-1.45 | 0.6-2 | 0.13-0.18 | 3.0-5.9 | 0.1-1.0 | .28 | .32 | | | |
| | 38-72 | 35-55 | 1.30-1.65 | 0.06-0.2 | 0.12-0.17 | 6.0-8.9 | 0.1-1.0 | .32 | .32 | | | |
| | 72-80 | 18-35 | 1.28-1.69 | 0.2-0.6 | 0.11-0.16 | 3.0-5.9 | 0.1-1.0 | .37 | .37 | | | |
| LuC: | | | | | | | | | | | | |
| Lilbert | 0-7 | 3-15 | 1.50-1.60 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-2.0 | .20 | .20 | 5 | 2 | 134 |
| | 7-33 | 3-15 | 1.50-1.65 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.2-1.0 | .20 | .20 | | | |
| | 33-41 | 16-35 | 1.55-1.69 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.2-1.0 | .24 | .24 | | | |
| | 41-80 | 16-38 | 1.60-1.75 | 0.2-0.6 | 0.10-0.15 | 0.0-2.9 | 0.2-1.0 | .20 | .24 | | | |
| Mf: | | | | | | | | | | | | |
| Mantachie | 0-29 | 8-20 | 1.50-1.60 | 0.6-2 | 0.16-0.20 | 0.0-2.9 | 1.0-3.0 | .24 | .28 | 5 | 5 | 56 |
| | 29-80 | 18-34 | 1.50-1.60 | 0.6-2 | 0.14-0.20 | 0.0-2.9 | 1.0-3.0 | .24 | .28 | | | |
| MiA: | | | | | | | | | | | | |
| Metcalf | 0-4 | 7-22 | 1.35-1.65 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.5-2.0 | .49 | .49 | 5 | 5 | 56 |
| | 4-31 | 10-40 | 1.35-1.65 | 0.2-0.6 | 0.15-0.20 | 0.0-2.9 | 0.0-0.5 | .37 | .37 | | | |
| | 31-80 | 38-60 | 1.20-1.60 | 0.00-0.06 | 0.15-0.18 | 6.0-8.9 | 0.0-0.5 | .32 | .32 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea- bility (Ksat) | Available water capacity | Linear extensi- bility | Organic matter | Erosion factors Kw | Erosion factors Kf | Erosion factors T | Wind erodi- bility group | Wind erodi- bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| MkA: | | | | | | | | | | | | |
| Mollville----------- | 0-14 | 16-20 | 1.40-1.65 | 0.2-0.6 | 0.15-0.20 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | 5 | 5 | 56 |
| | 14-34 | 20-35 | 1.50-1.69 | 0.06-0.2 | 0.12-0.17 | 3.0-5.9 | 0.0-0.5 | .32 | .32 | | | |
| | 34-63 | 15-35 | 1.50-1.69 | 0.06-0.2 | 0.15-0.20 | 3.0-5.9 | 0.0-0.5 | .32 | .32 | | | |
| | 63-80 | 3-12 | 1.50-1.65 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.0-0.5 | .20 | .20 | | | |
| Kildare------------- | 0-14 | 3-20 | 1.40-1.60 | 2-6 | 0.11-0.15 | 0.0-2.9 | 0.2-2.0 | .49 | .49 | 2 | 3 | 86 |
| | 14-30 | 18-30 | 1.45-1.65 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.1-1.0 | .43 | .43 | | | |
| | 30-45 | 18-35 | 1.50-1.80 | 0.00-0.06 | 0.07-0.14 | 0.0-2.9 | 0.1-1.0 | .37 | .37 | | | |
| | 45-80 | 3-12 | 1.50-1.65 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.0-0.5 | .20 | .20 | | | |
| MlA: | | | | | | | | | | | | |
| Mollville----------- | 0-9 | 16-20 | 1.40-1.65 | 0.2-0.6 | 0.15-0.20 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | 5 | 5 | 56 |
| | 9-57 | 20-35 | 1.50-1.69 | 0.06-0.2 | 0.12-0.17 | 3.0-5.9 | 0.0-0.5 | .32 | .32 | | | |
| | 57-65 | 15-35 | 1.50-1.69 | 0.06-0.2 | 0.15-0.20 | 3.0-5.9 | 0.0-0.5 | .32 | .32 | | | |
| | 65-80 | 3-12 | 1.50-1.65 | 2-6 | 0.07-0.11 | 0.0-2.9 | 0.0-0.5 | .20 | .20 | | | |
| Mm: | | | | | | | | | | | | |
| Mooreville---------- | 0-9 | 5-27 | 1.40-1.50 | 0.6-2 | 0.14-0.20 | 0.0-2.9 | 0.5-2.0 | .37 | .37 | 5 | 5 | 56 |
| | 9-57 | 18-35 | 1.40-1.50 | 0.6-2 | 0.14-0.18 | 3.0-5.9 | 0.5-2.0 | .28 | .28 | | | |
| | 57-80 | 8-27 | 1.40-1.60 | 0.6-2 | 0.14-0.18 | 3.0-5.9 | 0.5-2.0 | .28 | .28 | | | |
| Mantachie----------- | 0-8 | 18-28 | 1.50-1.60 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 1.0-3.0 | .28 | .28 | 5 | 5 | 56 |
| | 8-17 | 18-32 | 1.50-1.60 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 1.0-2.0 | .28 | .28 | | | |
| | 17-29 | 18-32 | 1.50-1.60 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.5-1.5 | .28 | .28 | | | |
| | 29-80 | 18-34 | 1.50-1.60 | 0.6-2 | 0.14-0.20 | 0.0-2.9 | 0.5-1.5 | .28 | .28 | | | |
| RgC: | | | | | | | | | | | | |
| Redsprings---------- | 0-6 | 2-15 | 1.35-1.55 | 0.6-2 | 0.07-0.11 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 4 | 8 | 0 |
| | 6-44 | 35-60 | 1.30-1.45 | 0.2-0.6 | 0.11-0.15 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| | 44-80 | 20-35 | 1.40-1.60 | 0.06-0.2 | 0.08-0.14 | 3.0-5.9 | 0.5-1.0 | .28 | .32 | | | |
| RnB: | | | | | | | | | | | | |
| Rentzel------------- | 0-11 | 5-10 | 1.25-1.35 | 6-20 | 0.05-0.09 | 0.0-2.9 | 0.1-2.0 | .17 | .17 | 5 | 2 | 134 |
| | 11-25 | 5-10 | 1.30-1.55 | 6-20 | 0.05-0.09 | 0.0-2.9 | 0.1-1.0 | .17 | .17 | | | |
| | 25-80 | 15-35 | 1.40-1.75 | 0.2-0.6 | 0.10-0.15 | 0.0-2.9 | 0.1-1.0 | .32 | .32 | | | |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea-bility (Ksat) | Available water capacity | Linear extensi-bility | Organic matter | Erosion factors Kw | Erosion factors Kf | Erosion factors T | Wind erodi-bility group | Wind erodi-bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| SaC: | | | | | | | | | | | | |
| Sacul---------------- | 0-11 | 10-25 | 1.30-1.50 | 0.6-2 | 0.13-0.17 | 0.0-2.9 | 1.0-3.0 | .32 | .37 | 5 | 5 | 56 |
| | 11-31 | 35-60 | 1.25-1.40 | 0.06-0.2 | 0.15-0.18 | 6.0-8.9 | 0.5-1.0 | .28 | .32 | | | |
| | 31-45 | 15-40 | 1.30-1.45 | 0.2-0.6 | 0.14-0.18 | 0.0-2.9 | 0.5-2.0 | .28 | .37 | | | |
| | 45-80 | 2-25 | 1.40-1.60 | 0.6-2 | 0.07-0.17 | 0.0-2.9 | 0.5-2.0 | .28 | .37 | | | |
| SlC: | | | | | | | | | | | | |
| Sailes--------------- | 0-6 | 10-20 | 1.30-1.70 | 0.6-2 | 0.09-0.16 | 0.0-2.9 | 0.5-2.0 | .24 | .28 | 5 | 3 | 86 |
| | 6-72 | 18-35 | 1.40-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.5-1.0 | .28 | .32 | | | |
| | 72-80 | 18-35 | 1.40-1.70 | 0.6-2 | 0.12-0.18 | 0.0-2.9 | 0.5-1.0 | .28 | .32 | | | |
| Sm: | | | | | | | | | | | | |
| Sardis--------------- | 0-5 | 10-25 | 1.25-1.60 | 0.6-2 | 0.15-0.24 | 0.0-2.9 | 1.0-3.0 | .37 | .37 | 5 | 5 | 56 |
| | 5-51 | 14-35 | 1.25-1.60 | 0.6-2 | 0.15-0.24 | 0.0-2.9 | 0.5-1.0 | .37 | .37 | | | |
| | 51-80 | 8-25 | 1.25-1.60 | 0.6-2 | 0.10-0.24 | 0.0-2.9 | 0.0-0.5 | .37 | .37 | | | |
| Manco---------------- | 0-6 | 9-20 | 1.25-1.45 | 0.6-2 | 0.15-0.20 | 0.0-2.9 | 1.0-4.0 | .37 | .37 | 5 | 8 | 0 |
| | 6-48 | 18-30 | 1.25-1.45 | 0.6-2 | 0.11-0.24 | 0.0-2.9 | 0.2-1.0 | .37 | .37 | | | |
| | 48-80 | 18-34 | 1.25-1.45 | 0.6-2 | 0.12-0.22 | 3.0-5.9 | 0.2-1.0 | .37 | .37 | | | |
| So: | | | | | | | | | | | | |
| Socagee-------------- | 0-5 | 27-40 | 1.35-1.65 | 0.6-2 | 0.15-0.20 | 3.0-5.9 | 1.0-3.0 | .32 | .32 | 5 | 6 | 48 |
| | 5-60 | 20-40 | 1.35-1.65 | 0.2-0.6 | 0.15-0.20 | 3.0-5.9 | 0.1-2.0 | .32 | .32 | | | |
| | 60-80 | 18-40 | 1.35-1.65 | 0.2-0.6 | 0.14-0.20 | 3.0-5.9 | 0.1-1.0 | .32 | .32 | | | |
| TnB: | | | | | | | | | | | | |
| Tenaha--------------- | 0-7 | 3-15 | 1.50-1.65 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-1.0 | .24 | .24 | 3 | 2 | 134 |
| | 7-23 | 3-15 | 1.50-1.65 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.1-0.5 | .20 | .24 | | | |
| | 23-41 | 15-35 | 1.50-1.65 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.1-0.5 | .32 | .32 | | | |
| | 41-80 | 20-35 | 1.60-1.75 | 0.2-0.6 | 0.08-0.14 | 0.0-2.9 | 0.1-0.5 | .28 | .32 | | | |
| TnD: | | | | | | | | | | | | |
| Tenaha--------------- | 0-3 | 3-15 | 1.50-1.65 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.5-1.0 | .24 | .24 | 3 | 2 | 134 |
| | 3-24 | 3-15 | 1.50-1.65 | 6-20 | 0.05-0.10 | 0.0-2.9 | 0.1-0.5 | .20 | .24 | | | |
| | 24-55 | 15-35 | 1.50-1.65 | 0.6-2 | 0.10-0.15 | 0.0-2.9 | 0.1-0.5 | .32 | .32 | | | |
| | 55-80 | 20-35 | 1.60-1.75 | 0.2-0.6 | 0.08-0.14 | 0.0-2.9 | 0.1-0.5 | .28 | .32 | | | |
| Ud: | | | | | | | | | | | | |
| Udorthents, gravelly | 0-80 | 10-20 | 1.50-1.60 | 0.06-20 | 0.05-0.10 | 0.0-2.9 | 0.0-0.5 | .17 | .28 | 5 | 3 | 86 |

Table 29.--Physical Soil Properties--Continued

| Map symbol and soil name | Depth | Clay | Moist bulk density | Permea- bility (Ksat) | Available water capacity | Linear extensi- bility | Organic matter | Erosion factors | | | Wind erodi- bility group | Wind erodi- bility index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Kw | Kf | T | | |
| | In | Pct | g/cc | In/hr | In/in | Pct | Pct | | | | | |
| WrA: | | | | | | | | | | | | |
| Wrightsville-------- | 0-11 | 10-25 | 1.25-1.50 | 0.2-0.6 | 0.16-0.24 | 0.0-2.9 | 0.5-3.0 | .43 | .43 | 5 | 6 | 48 |
| | 11-35 | 35-55 | 1.20-1.45 | 0.00-0.06 | 0.14-0.22 | 6.0-8.9 | 0.5-1.0 | .37 | .37 | | | |
| | 35-80 | 20-45 | 1.20-1.50 | 0.00-0.06 | 0.14-0.22 | 3.0-5.9 | 0.0-0.5 | .37 | .37 | | | |

Table 30.--Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

| Map symbol and soil name | Depth | Cation exchange capacity | Effective cation exchange capacity | Soil reaction | Calcium carbon-ate | Gypsum | Salinity | Sodium adsorp-tion ratio |
|---|---|---|---|---|---|---|---|---|
| | Inches | meq/100 g | meq/100 g | pH | Pct | Pct | mmhos/cm | |
| AaB: | | | | | | | | |
| Alazan | 0-3 | --- | 2.0-10 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| | 3-12 | --- | 2.0-10 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| | 12-20 | 5.0-15 | --- | 4.5-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 20-26 | 5.0-15 | --- | 4.5-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 26-75 | 5.0-15 | --- | 4.5-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 75-80 | 5.0-15 | --- | 4.5-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| AsA: | | | | | | | | |
| Ashford | 0-3 | --- | 36-45 | 3.5-5.0 | 0 | 0 | 0 | 0 |
| | 3-58 | --- | 54-67 | 3.5-5.0 | 0 | 0 | 0 | 0 |
| | 58-75 | --- | 45-67 | 3.5-5.0 | 0 | 0 | 0 | 0 |
| | 75-80 | --- | 36-60 | 3.5-5.5 | 0 | 0 | 0 | 0 |
| BaB: | | | | | | | | |
| Bernaldo | 0-9 | 4.0-7.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 9-18 | 4.0-7.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 18-31 | 10-20 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 31-80 | 5.0-15 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| BaD: | | | | | | | | |
| Bernaldo | 0-4 | 4.0-7.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 4-18 | 4.0-7.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 18-46 | 10-20 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 46-80 | 5.0-15 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| Bg: | | | | | | | | |
| Bibb | 0-12 | --- | 4.0-7.0 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 12-80 | --- | 4.0-7.0 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| BoC: | | | | | | | | |
| Bowie | 0-10 | 2.0-10 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 10-27 | --- | 5.0-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 27-73 | --- | 5.0-18 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 73-80 | --- | 5.0-30 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| BrB: | | | | | | | | |
| Briley | 0-10 | 1.9-6.6 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 10-22 | 1.8-6.5 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 22-80 | --- | 2.7-7.6 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| CrF: | | | | | | | | |
| Cuthbert | 0-13 | 3.0-9.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 13-27 | --- | 10-20 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 27-31 | --- | 5.0-15 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 31-80 | --- | 1.0-5.0 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| Redsprings | 0-9 | 5.0-15 | --- | 5.6-7.3 | 0 | 0 | 0 | 0 |
| | 9-44 | 8.0-30 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 44-53 | --- | 8.0-30 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 53-80 | --- | 8.0-30 | 4.5-6.0 | 0 | 0 | 0 | 0 |

Table 30.--Chemical Soil Properties--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Effective cation exchange capacity | Soil reaction | Calcium carbon- ate | Gypsum | Salinity | Sodium adsorp- tion ratio |
|---|---|---|---|---|---|---|---|---|
| | Inches | meq/100 g | meq/100 g | pH | Pct | Pct | mmhos/cm | |
| CrG: | | | | | | | | |
| Cuthbert-------------- | 0-13 | 3.0-9.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 13-21 | --- | 10-20 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 21-35 | --- | 5.0-15 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 35-80 | --- | 1.0-5.0 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| Redsprings----------- | 0-6 | 5.0-15 | --- | 5.6-7.3 | 0 | 0 | 0 | 0 |
| | 6-33 | 8.0-30 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 33-41 | --- | 8.0-30 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 41-80 | --- | 8.0-30 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| CtE: | | | | | | | | |
| Cuthbert-------------- | 0-9 | 3.0-9.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 9-24 | --- | 10-20 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 24-31 | --- | 5.0-15 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 31-80 | --- | 1.0-5.0 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| CuE: | | | | | | | | |
| Cuthbert-------------- | 0-9 | 3.0-9.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 9-30 | --- | 10-20 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 30-35 | --- | 5.0-15 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 35-80 | --- | 1.0-5.0 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| Cy: | | | | | | | | |
| Cypress--------------- | 0-3 | --- | 15-32 | 3.5-5.0 | 0 | 0 | 0.0-2.0 | 0 |
| | 3-80 | --- | 15-35 | 3.5-5.0 | 0 | 0 | 0.0-2.0 | 0 |
| DaB: | | | | | | | | |
| Darco----------------- | 0-10 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 10-62 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 62-74 | 3.0-10 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 74-80 | 3.0-10 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| DaE: | | | | | | | | |
| Darco----------------- | 0-9 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 9-59 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 59-80 | 3.0-10 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| DuA: | | | | | | | | |
| Duffern--------------- | 0-4 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 4-43 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 43-80 | 1.0-4.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| EeB: | | | | | | | | |
| Eastwood-------------- | 0-10 | --- | 10-20 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 10-70 | --- | 15-50 | 3.6-5.5 | 0 | 0 | 0 | 0-2 |
| | 70-80 | 15-50 | --- | 4.5-7.3 | 0 | 0-5 | 0.0-4.0 | 0-8 |
| EeD: | | | | | | | | |
| Eastwood-------------- | 0-5 | --- | 10-20 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 5-47 | --- | 15-50 | 3.6-5.5 | 0 | 0 | 0 | 0-2 |
| | 47-57 | --- | 15-50 | 3.6-6.5 | 0 | 0-5 | 0.0-2.0 | 0-4 |
| | 57-80 | 15-50 | --- | 4.5-7.3 | 0 | 0-5 | 0.0-4.0 | 0-8 |
| ElA: | | | | | | | | |
| Elrose---------------- | 0-13 | 2.0-5.0 | --- | 5.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| | 13-38 | 8.0-12 | --- | 4.5-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| | 38-80 | 10-15 | --- | 4.5-6.5 | 0-1 | 0 | 0.0-2.0 | 0 |

Table 30.--Chemical Soil Properties--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Effective cation exchange capacity | Soil reaction | Calcium carbon- ate | Gypsum | Salinity | Sodium adsorp- tion ratio |
|---|---|---|---|---|---|---|---|---|
| | Inches | meq/100 g | meq/100 g | pH | Pct | Pct | mmhos/cm | |
| EtA: | | | | | | | | |
| Erno------------------ | 0-10 | 2.0-10 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 10-20 | 2.0-10 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 20-80 | --- | 2.0-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| Thage---------------- | 0-8 | 5.0-15 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 8-34 | --- | 10-25 | 4.5-5.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 34-80 | --- | 10-30 | 4.5-6.0 | 0 | 0-2 | 0.0-4.0 | 0 |
| EyB: | | | | | | | | |
| Eylau---------------- | 0-16 | 5.0-12 | --- | 5.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 16-38 | --- | 10-18 | 4.5-5.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 38-48 | --- | 10-15 | 4.5-5.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 48-80 | --- | 7.0-15 | 4.5-5.5 | 0 | 0 | 0.0-2.0 | 0 |
| GaA: | | | | | | | | |
| Gallime-------------- | 0-27 | 5.0-15 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 27-38 | 5.0-15 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 38-80 | --- | 15-35 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| GaC: | | | | | | | | |
| Gallime-------------- | 0-21 | 5.0-15 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 21-43 | 5.0-15 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 43-80 | --- | 15-35 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| Guyton--------------- | 0-8 | --- | 4.0-10 | 3.6-6.0 | 0 | 0 | 0 | 0 |
| | 8-60 | --- | 10-30 | 3.6-6.0 | 0 | 0-5 | 0 | 0 |
| | 60-80 | 10-30 | --- | 3.6-8.4 | 0 | 0-5 | 0 | 0-10 |
| Gf: | | | | | | | | |
| Gladewater----------- | 0-8 | 35-60 | --- | 5.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| | 8-80 | 30-50 | --- | 4.5-6.5 | 0 | 0-5 | 0.0-2.0 | 0 |
| HaA: | | | | | | | | |
| Hainesville---------- | 0-24 | 1.0-5.0 | --- | 5.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| | 24-80 | 1.0-6.0 | --- | 4.5-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| Hb: | | | | | | | | |
| Hannahatchee--------- | 0-15 | 5.0-10 | --- | 5.1-7.3 | 0 | 0 | 0 | 0 |
| | 15-29 | 5.0-15 | --- | 5.6-7.3 | 0 | 0 | 0 | 0 |
| | 29-80 | 5.0-20 | --- | 5.6-7.3 | 0 | 0 | 0 | 0 |
| Iu: | | | | | | | | |
| Iulus---------------- | 0-8 | --- | 2.0-10 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| | 8-53 | --- | 2.0-10 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| | 53-80 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| KiC: | | | | | | | | |
| Kirvin--------------- | 0-12 | 1.0-10 | --- | 5.1-7.3 | 0 | 0 | 0 | 0 |
| | 12-23 | --- | 10-25 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 23-43 | --- | 10-25 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| | 43-80 | --- | 10-20 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| KiD: | | | | | | | | |
| Kirvin--------------- | 0-6 | 10-20 | 3.7-8.0 | 4.6-6.5 | 0 | 0 | 0 | 0 |
| | 6-24 | --- | 10-25 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 24-47 | --- | 10-25 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| | 47-80 | --- | 10-20 | 3.6-5.5 | 0 | 0 | 0 | 0 |

Table 30.--Chemical Soil Properties--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Effective cation exchange capacity | Soil reaction | Calcium carbon- ate | Gypsum | Salinity | Sodium adsorp- tion ratio |
|---|---|---|---|---|---|---|---|---|
| | Inches | meq/100 g | meq/100 g | pH | Pct | Pct | mmhos/cm | |
| KrC: | | | | | | | | |
| Kirvin | 0-6 | 1.0-10 | --- | 5.1-7.3 | 0 | 0 | 0 | 0 |
| | 6-43 | --- | 10-25 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 43-51 | --- | 10-25 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| | 51-80 | --- | 10-20 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| KuA: | | | | | | | | |
| Kullit | 0-13 | 5.0-10 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 13-49 | --- | 10-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 49-80 | --- | 15-25 | 4.5-5.0 | 0 | 0 | 0 | 0 |
| LcB: | | | | | | | | |
| Latch | 0-7 | 1.0-4.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 7-54 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 54-75 | --- | 4.0-15 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 75-80 | 1.0-4.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| LmB: | | | | | | | | |
| Latch | 0-5 | 1.0-4.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 5-56 | 1.0-3.0 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 56-80 | --- | 4.0-15 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| Mollville | 0-17 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0-2 |
| | 17-28 | --- | 15-25 | 4.5-6.0 | 0 | 0 | 0.0-4.0 | 2-10 |
| | 28-69 | 10-25 | --- | 5.1-7.8 | 0-2 | 0-3 | 0.0-4.0 | 2-10 |
| | 69-80 | 5.0-10 | --- | 5.1-7.8 | 0-2 | 0-3 | 0.0-4.0 | 2-10 |
| LtB: | | | | | | | | |
| Latex | 0-12 | --- | 2.0-15 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 12-28 | --- | 2.0-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 28-38 | --- | 2.0-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 38-72 | --- | 12-40 | 4.5-5.0 | 0 | 0 | 0 | 0 |
| | 72-80 | --- | 12-40 | 3.6-5.0 | 0 | 0 | 0 | 0 |
| LuC: | | | | | | | | |
| Lilbert | 0-7 | --- | 5.0-10 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 7-33 | --- | 5.0-10 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 33-41 | --- | 10-25 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 41-80 | --- | 10-25 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| Mf: | | | | | | | | |
| Mantachie | 0-29 | --- | 1.8-5.9 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 29-80 | --- | 4.6-11 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| MiA: | | | | | | | | |
| Metcalf | 0-4 | --- | 5.0-15 | 3.6-6.0 | 0 | 0 | 0 | 0 |
| | 4-31 | --- | 10-30 | 3.6-6.0 | 0 | 0 | 0 | 0 |
| | 31-80 | --- | 20-50 | 3.6-6.0 | 0 | 0 | 0 | 0 |
| MkA: | | | | | | | | |
| Mollville | 0-14 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0-2 |
| | 14-34 | --- | 15-25 | 4.5-6.0 | 0 | 0 | 0.0-4.0 | 2-10 |
| | 34-63 | 10-25 | --- | 5.1-7.8 | 0-2 | 0-3 | 0.0-4.0 | 2-10 |
| | 63-80 | 5.0-10 | --- | 5.1-7.8 | 0-2 | 0-3 | 0.0-4.0 | 2-10 |
| Kildare | 0-14 | 3.0-15 | 1.0-5.0 | 4.0-6.0 | 0 | 0 | 1.0-3.0 | 5-20 |
| | 14-30 | 3.0-15 | 2.0-10 | 4.0-6.7 | 0 | 0 | 2.0-5.0 | 13-30 |
| | 30-45 | 2.0-15 | 2.0-10 | 4.0-6.7 | 0 | 0 | 2.0-4.0 | 10-30 |
| | 45-80 | 1.0-10 | 0.2-0.5 | 4.0-6.7 | 0 | 0 | 0.0-2.0 | 0-4 |

Table 30.--Chemical Soil Properties--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Effective cation exchange capacity | Soil reaction | Calcium carbon- ate | Gypsum | Salinity | Sodium adsorp- tion ratio |
|---|---|---|---|---|---|---|---|---|
| | Inches | meq/100 g | meq/100 g | pH | Pct | Pct | mmhos/cm | |
| MlA: | | | | | | | | |
| Mollville | 0-9 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0.0-2.0 | 0-2 |
| | 9-57 | --- | 15-25 | 4.5-6.0 | 0 | 0 | 0.0-4.0 | 2-10 |
| | 57-65 | 10-25 | --- | 5.1-7.8 | 0-2 | 0-3 | 0.0-4.0 | 2-10 |
| | 65-80 | 5.0-10 | --- | 5.1-7.8 | 0-2 | 0-3 | 0.0-4.0 | 2-10 |
| Mm: | | | | | | | | |
| Mooreville | 0-9 | --- | 1.1-9.1 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 9-57 | --- | 4.9-12 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 57-80 | --- | 1.9-9.1 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| Mantachie | 0-8 | --- | 7.7-10 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 8-17 | --- | 7.7-10 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 17-29 | --- | 7.7-10 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 29-80 | --- | 4.6-11 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| RgC: | | | | | | | | |
| Redsprings | 0-6 | 5.0-15 | --- | 5.6-7.3 | 0 | 0 | 0 | 0 |
| | 6-44 | 8.0-30 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| | 44-80 | --- | 8.0-30 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| RnB: | | | | | | | | |
| Rentzel | 0-11 | 1.0-5.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 11-25 | 1.0-5.0 | --- | 5.1-6.5 | 0 | 0 | 0 | 0 |
| | 25-80 | --- | 3.0-10 | 3.5-5.5 | 0 | 0 | 0 | 0 |
| SaC: | | | | | | | | |
| Sacul | 0-11 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 11-31 | --- | 20-45 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 31-45 | --- | 15-40 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 45-80 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| SlC: | | | | | | | | |
| Sailes | 0-6 | --- | 2.0-10 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 6-72 | --- | 5.0-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| | 72-80 | --- | 5.0-15 | 4.5-5.5 | 0 | 0 | 0 | 0 |
| Sm: | | | | | | | | |
| Sardis | 0-5 | --- | 10-25 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 5-51 | --- | 5.0-30 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 51-80 | --- | 5.0-15 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| Manco | 0-6 | --- | 10-15 | 3.5-5.0 | 0 | 0 | 0.0-2.0 | 0-2 |
| | 6-48 | --- | 5.0-15 | 3.5-5.0 | 0 | 0 | 0.0-2.0 | 0-4 |
| | 48-80 | --- | 10-15 | 3.5-5.0 | 0 | 0 | 0.0-2.0 | 0-4 |
| So: | | | | | | | | |
| Socagee | 0-5 | --- | 5.0-15 | 4.5-5.0 | 0 | 0-2 | 0.0-2.0 | 0 |
| | 5-60 | --- | 10-25 | 3.5-5.0 | 0 | 0-2 | 0.0-4.0 | 0-2 |
| | 60-80 | 10-25 | --- | 4.5-7.3 | 0 | 0-4 | 0.0-4.0 | 0-4 |
| TnB: | | | | | | | | |
| Tenaha | 0-7 | --- | 1.0-5.0 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 7-23 | --- | 1.0-5.0 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 23-41 | --- | 5.0-20 | 3.5-5.5 | 0 | 0 | 0 | 0 |
| | 41-80 | --- | 5.0-20 | 3.5-5.5 | 0 | 0 | 0 | 0 |

Table 30.--Chemical Soil Properties--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Effective cation exchange capacity | Soil reaction | Calcium carbon-ate | Gypsum | Salinity | Sodium adsorp-tion ratio |
|---|---|---|---|---|---|---|---|---|
| | Inches | meq/100 g | meq/100 g | pH | Pct | Pct | mmhos/cm | |
| TnD: | | | | | | | | |
| Tenaha--------------- | 0-3 | --- | 1.0-5.0 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 3-24 | --- | 1.0-5.0 | 4.5-6.0 | 0 | 0 | 0 | 0 |
| | 24-55 | --- | 5.0-20 | 3.5-5.5 | 0 | 0 | 0 | 0 |
| | 55-80 | --- | 5.0-20 | 3.5-5.5 | 0 | 0 | 0 | 0 |
| Ud: | | | | | | | | |
| Udorthents, gravelly | 0-80 | 5.7-14 | --- | 4.5-6.5 | 0 | 0 | 0 | 0 |
| WrA: | | | | | | | | |
| Wrightsville--------- | 0-11 | --- | 5.0-15 | 3.6-5.5 | 0 | 0 | 0 | 0 |
| | 11-35 | --- | 15-45 | 3.6-6.0 | 0 | 0 | 0 | 0 |
| | 35-80 | 15-45 | --- | 3.6-8.4 | 0 | 0 | 0 | 0 |

Table 31.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

| Map symbol and soil name | Restrictive layer | | | | Risk of corrosion | |
|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Uncoated steel | Concrete |
| | | In | In | | | |
| AaB: | | | | | | |
| Alazan | --- | --- | --- | --- | High | Moderate |
| AsA: | | | | | | |
| Ashford | --- | --- | --- | --- | High | High |
| BaB: | | | | | | |
| Bernaldo | --- | --- | --- | --- | Moderate | Moderate |
| BaD: | | | | | | |
| Bernaldo | --- | --- | --- | --- | Moderate | Moderate |
| Bg: | | | | | | |
| Bibb | --- | --- | --- | --- | High | Moderate |
| BoC: | | | | | | |
| Bowie | --- | --- | --- | --- | Moderate | High |
| BrB: | | | | | | |
| Briley | --- | --- | --- | --- | Moderate | High |
| CrF: | | | | | | |
| Cuthbert | Densic material | 20-40 | --- | Noncemented | High | High |
| Redsprings | Densic material | 40-60 | --- | Noncemented | High | High |
| CrG: | | | | | | |
| Cuthbert | Densic material | 20-40 | --- | Noncemented | High | High |
| Redsprings | Densic material | 40-60 | --- | Noncemented | High | High |
| CtE: | | | | | | |
| Cuthbert | Densic material | 20-40 | --- | Noncemented | High | High |
| CuE: | | | | | | |
| Cuthbert | Densic material | 20-40 | --- | Noncemented | High | High |
| Cy: | | | | | | |
| Cypress | --- | --- | --- | --- | Moderate | High |
| DaB: | | | | | | |
| Darco | --- | --- | --- | --- | Low | Moderate |
| DaE: | | | | | | |
| Darco | --- | --- | --- | --- | Low | Moderate |
| DuA: | | | | | | |
| Duffern | --- | --- | --- | --- | Low | Moderate |
| EeB: | | | | | | |
| Eastwood | Densic material | 40-80 | --- | Noncemented | High | High |
| EeD: | | | | | | |
| Eastwood | Densic material | 40-80 | --- | Noncemented | High | High |

Table 31.--Soil Features--Continued

| Map symbol and soil name | Restrictive layer: Kind | Restrictive layer: Depth to top | Restrictive layer: Thickness | Restrictive layer: Hardness | Risk of corrosion: Uncoated steel | Risk of corrosion: Concrete |
|---|---|---|---|---|---|---|
| | | In | In | | | |
| ElA: | | | | | | |
| Elrose | --- | --- | --- | --- | Moderate | Moderate |
| EtA: | | | | | | |
| Erno | Fragipan | 20-40 | --- | Noncemented | Moderate | Moderate |
| Thage | Fragipan | 25-40 | --- | Noncemented | High | High |
| EyB: | | | | | | |
| Eylau | --- | --- | --- | --- | Moderate | High |
| GaA: | | | | | | |
| Gallime | --- | --- | --- | --- | Moderate | Moderate |
| GaC: | | | | | | |
| Gallime | --- | --- | --- | --- | Moderate | Moderate |
| Guyton | --- | --- | --- | --- | High | High |
| Gf: | | | | | | |
| Gladewater | --- | --- | --- | --- | High | Moderate |
| HaA: | | | | | | |
| Hainesville | --- | --- | --- | --- | Low | Moderate |
| Hb: | | | | | | |
| Hannahatchee | --- | --- | --- | --- | Moderate | Moderate |
| Iu: | | | | | | |
| Iulus | --- | --- | --- | --- | Moderate | High |
| KiC: | | | | | | |
| Kirvin | Densic material | 40-60 | --- | Noncemented | High | High |
| KiD: | | | | | | |
| Kirvin | Densic material | 40-60 | --- | Noncemented | High | High |
| KrC: | | | | | | |
| Kirvin | Densic material | 40-60 | --- | Noncemented | High | High |
| KuA: | | | | | | |
| Kullit | --- | --- | --- | --- | High | High |
| LcB: | | | | | | |
| Latch | --- | --- | --- | --- | Moderate | High |
| LmB: | | | | | | |
| Latch | --- | --- | --- | --- | Moderate | High |
| Mollville | --- | --- | --- | --- | High | High |
| LtB: | | | | | | |
| Latex | --- | --- | --- | --- | Moderate | High |
| LuC: | | | | | | |
| Lilbert | --- | --- | --- | --- | Moderate | High |

Table 31.--Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Risk of corrosion | |
|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Uncoated steel | Concrete |
| | | In | In | | | |
| Mf: | | | | | | |
| Mantachie | --- | --- | --- | --- | High | High |
| MiA: | | | | | | |
| Metcalf | --- | --- | --- | --- | High | Moderate |
| MkA: | | | | | | |
| Mollville | --- | --- | --- | --- | High | High |
| Kildare | Fragipan | 25-40 | --- | Noncemented | High | High |
| MlA: | | | | | | |
| Mollville | --- | --- | --- | --- | High | High |
| Mm: | | | | | | |
| Mooreville | --- | --- | --- | --- | Moderate | High |
| Mantachie | --- | --- | --- | --- | High | High |
| RgC: | | | | | | |
| Redsprings | Densic material | 40-60 | --- | Noncemented | High | High |
| RnB: | | | | | | |
| Rentzel | --- | --- | --- | --- | High | High |
| SaC: | | | | | | |
| Sacul | --- | --- | --- | --- | High | High |
| SlC: | | | | | | |
| Sailes | --- | --- | --- | --- | Moderate | Moderate |
| Sm: | | | | | | |
| Sardis | --- | --- | --- | --- | High | Moderate |
| Manco | --- | --- | --- | --- | High | High |
| So: | | | | | | |
| Socagee | --- | --- | --- | --- | High | Moderate |
| TnB: | | | | | | |
| Tenaha | Densic material | 40-60 | --- | Noncemented | Moderate | Moderate |
| TnD: | | | | | | |
| Tenaha | Densic material | 40-60 | --- | Noncemented | Moderate | Moderate |
| Ud: | | | | | | |
| Udorthents, gravelly | --- | --- | --- | --- | Moderate | Low |
| W: | | | | | | |
| Water | --- | --- | --- | --- | --- | --- |
| WrA: | | | | | | |
| Wrightsville | --- | --- | --- | --- | High | High |

Table 32.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

| Map symbol and soil name | Hydro-logic group | Surface runoff | Month | Water table: Upper limit | Water table: Lower limit | Ponding: Surface water depth | Ponding: Duration | Ponding: Frequency | Flooding: Duration | Flooding: Frequency |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ft | Ft | Ft | | | | |
| AaB: | | | | | | | | | | |
| Alazan | C | Low | Jan-Apr | 1.5-2.5 | >6.0 | --- | --- | None | --- | None |
| | | | May-Dec | --- | --- | --- | --- | None | --- | None |
| AsA: | | | | | | | | | | |
| Ashford | D | Negligible | Jan-Apr | 0.0-1.0 | 0.5-1.5 | 0.0-1.0 | Long | Frequent | --- | None |
| | | | May-Nov | --- | --- | --- | --- | --- | --- | None |
| | | | Dec | 0.0-1.0 | 0.5-1.5 | 0.0-1.0 | Long | Frequent | --- | None |
| BaB: | | | | | | | | | | |
| Bernaldo | B | Low | Jan-May | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| | | | Jun-Oct | --- | --- | --- | --- | None | --- | None |
| | | | Nov-Dec | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| BaD: | | | | | | | | | | |
| Bernaldo | B | Medium | Jan-May | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| | | | Jun-Oct | --- | --- | --- | --- | None | --- | None |
| | | | Nov-Dec | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| Bg: | | | | | | | | | | |
| Bibb | D | Negligible | Jan-Apr | 0.5-1.0 | >6.0 | --- | --- | None | Long | Frequent |
| | | | May-Nov | --- | --- | --- | --- | None | Long | Frequent |
| | | | Dec | 0.5-1.0 | >6.0 | --- | --- | None | Long | Frequent |
| BoC: | | | | | | | | | | |
| Bowie | B | Medium | Jan-Apr | 3.5-5.0 | 4.0-6.0 | --- | --- | None | --- | None |
| | | | May-Dec | --- | --- | --- | --- | None | --- | None |
| BrB: | | | | | | | | | | |
| Briley | B | Very low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| CrF: | | | | | | | | | | |
| Cuthbert | C | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Redsprings | B | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |

Table 32.--Water Features--Continued

| Map symbol and soil name | Hydro-logic group | Surface runoff | Month | Water table: Upper limit | Water table: Lower limit | Ponding: Surface water depth | Ponding: Duration | Ponding: Frequency | Flooding: Duration | Flooding: Frequency |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ft | Ft | Ft | | | | |
| CrG: | | | | | | | | | | |
| Cuthbert | C | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Redsprings | B | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| CtE: | | | | | | | | | | |
| Cuthbert | C | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| CuE: | | | | | | | | | | |
| Cuthbert | C | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Cy: | | | | | | | | | | |
| Cypress | D | Negligible | Jan-Dec | 0.0 | >6.0 | 0.0-4.0 | Very long | Frequent | Very long | Frequent |
| DaB: | | | | | | | | | | |
| Darco | A | Negligible | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| DaE: | | | | | | | | | | |
| Darco | A | Very low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| DuA: | | | | | | | | | | |
| Duffern | A | Negligible | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| EeB: | | | | | | | | | | |
| Eastwood | D | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| EeD: | | | | | | | | | | |
| Eastwood | D | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| ElA: | | | | | | | | | | |
| Elrose | B | Low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| EtA: | | | | | | | | | | |
| Erno | B | High | Jan-Apr | 2.5-4.0 | 3.0-4.5 | --- | --- | None | --- | None |
| | | | Jun-Oct | --- | --- | --- | --- | None | --- | None |
| | | | Nov-Dec | 2.5-4.0 | 3.0-4.5 | --- | --- | None | --- | None |
| Thage | C | Medium | Jan-Apr | 2.0-4.0 | 2.5-4.5 | --- | --- | None | --- | None |
| | | | May-Dec | --- | --- | --- | --- | None | --- | None |

Table 32.--Water Features--Continued

| Map symbol and soil name | Hydro-logic group | Surface runoff | Month | Water table: Upper limit | Water table: Lower limit | Ponding: Surface water depth | Ponding: Duration | Ponding: Frequency | Flooding: Duration | Flooding: Frequency |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ft | Ft | Ft | | | | |
| EyB: | | | | | | | | | | |
| Eylau | C | Medium | Jan | --- | --- | --- | --- | None | --- | None |
| | | | Feb-May | 2.0-3.0 | 2.5-3.5 | --- | --- | None | --- | None |
| | | | Jun-Dec | --- | --- | --- | --- | None | --- | None |
| GaA: | | | | | | | | | | |
| Gallime | B | Low | Jan-Mar | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| | | | Apr-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| GaC: | | | | | | | | | | |
| Gallime | B | Low | Jan-Mar | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| | | | Apr-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 4.0-6.0 | 4.5-6.0 | --- | --- | None | --- | None |
| Guyton | D | Negligible | Jan-May | 0.0-1.5 | 0.5-2.5 | --- | --- | None | --- | None |
| | | | Jun-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 0.0-1.5 | 0.5-2.5 | --- | --- | None | --- | None |
| Gf: | | | | | | | | | | |
| Gladewater | D | Negligible | Jan-May | 1.5-3.5 | 2.0-4.0 | --- | --- | None | Very long | Frequent |
| | | | Jun-Oct | --- | --- | --- | --- | None | --- | None |
| | | | Nov-Dec | 1.5-3.5 | 2.0-4.0 | --- | --- | None | Very long | Frequent |
| HaA: | | | | | | | | | | |
| Hainesville | A | Negligible | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Hb: | | | | | | | | | | |
| Hannahatchee | B | Negligible | Mar-Apr | --- | --- | --- | --- | None | Brief | Occasional |
| Iu: | | | | | | | | | | |
| Iulus | B | Negligible | Jan-Apr | 1.5-4.0 | 2.0-5.0 | --- | --- | None | Very brief | Frequent |
| | | | Jun-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 1.5-4.0 | 2.0-5.0 | --- | --- | None | Very brief | Frequent |
| KiC: | | | | | | | | | | |
| Kirvin | C | Medium | Jan-Dec | --- | --- | --- | --- | None | --- | None |

Table 32.--Water Features--Continued

| Map symbol and soil name | Hydro-logic group | Surface runoff | Month | Water table: Upper limit | Water table: Lower limit | Ponding: Surface water depth | Ponding: Duration | Ponding: Frequency | Flooding: Duration | Flooding: Frequency |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ft | Ft | Ft | | | | |
| KiD: | | | | | | | | | | |
| Kirvin | C | Low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| KrC: | | | | | | | | | | |
| Kirvin | C | Medium | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| KuA: | | | | | | | | | | |
| Kullit | B | Medium | Jan-May | 2.0-3.0 | >6.0 | --- | --- | None | --- | None |
| | | | Jun-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 2.0-3.0 | >6.0 | --- | --- | None | --- | None |
| LcB: | | | | | | | | | | |
| Latch | A | Negligible | Jan-Apr | 2.5-4.0 | 3.5-5.0 | --- | --- | None | --- | None |
| | | | May-Dec | --- | --- | --- | --- | None | --- | None |
| LmB: | | | | | | | | | | |
| Latch | A | Negligible | Jan-Apr | 2.5-4.0 | 3.5-5.0 | --- | --- | None | --- | None |
| | | | May-Dec | --- | --- | --- | --- | None | --- | None |
| Mollville | D | Negligible | Jan-Jun | 0.0-1.0 | >6.0 | 0.0-0.5 | Long | Frequent | --- | None |
| | | | Jul-Oct | --- | --- | --- | --- | --- | --- | None |
| | | | Nov-Dec | 0.0-1.0 | >6.0 | 0.0-0.5 | Long | Frequent | --- | None |
| LtB: | | | | | | | | | | |
| Latex | C | Medium | Jan-Apr | 3.0-4.5 | 3.5-5.0 | --- | --- | None | --- | None |
| | | | May-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 3.0-4.5 | 3.5-5.0 | --- | --- | None | --- | None |
| LuC: | | | | | | | | | | |
| Lilbert | B | Low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Mf: | | | | | | | | | | |
| Mantachie | C | Negligible | Jan-Mar | 1.0-1.5 | >6.0 | --- | --- | None | Long | Frequent |
| | | | Apr-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 1.0-1.5 | >6.0 | --- | --- | None | --- | --- |

Table 32.--Water Features--Continued

| Map symbol and soil name | Hydro-logic group | Surface runoff | Month | Water table: Upper limit | Water table: Lower limit | Ponding: Surface water depth | Ponding: Duration | Ponding: Frequency | Flooding: Duration | Flooding: Frequency |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ft | Ft | Ft | | | | |
| MiA: | | | | | | | | | | |
| Metcalf | D | High | Jan-Apr | 1.5-2.5 | 2.0-3.5 | --- | --- | None | --- | None |
| | | | May-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 1.5-2.5 | 2.0-3.5 | --- | --- | None | --- | None |
| MkA: | | | | | | | | | | |
| Mollville | D | Negligible | Jan-Jun | 0.0-1.0 | >6.0 | 0.0-0.5 | Long | Frequent | --- | None |
| | | | Jul-Oct | --- | --- | --- | --- | --- | --- | None |
| | | | Nov-Dec | 0.0-1.0 | >6.0 | 0.0-0.5 | Long | Frequent | --- | None |
| Kildare | C | Negligible | Jan-Apr | 0.0-1.0 | 2.1-3.3 | 0.0-0.2 | Long | Frequent | --- | None |
| | | | | 3.3-5.8 | >6.0 | | | | | |
| | | | May-Oct | --- | --- | --- | --- | --- | --- | None |
| | | | November | 0.0-1.0 | 2.1-3.3 | --- | --- | --- | --- | None |
| | | | | 3.3-5.8 | >6.0 | | | | | |
| | | | December | 0.0-1.0 | 2.1-3.3 | 0.0-0.2 | Long | Frequent | --- | None |
| | | | | 3.3-5.8 | >6.0 | | | | | |
| MlA: | | | | | | | | | | |
| Mollville | D | Negligible | Jan-Jun | 0.0-1.0 | >6.0 | 0.0-0.5 | Long | Frequent | --- | None |
| | | | Jul-Oct | --- | --- | --- | --- | --- | --- | None |
| | | | Nov-Dec | 0.0-1.0 | >6.0 | 0.0-0.5 | Long | Frequent | --- | None |
| Mm: | | | | | | | | | | |
| Mooreville | C | Negligible | Jan-Mar | 1.5-3.0 | >6.0 | --- | --- | None | Brief | Frequent |
| | | | Apr-Dec | --- | --- | --- | --- | --- | --- | None |
| Mantachie | C | Negligible | Jan-Mar | 1.0-1.5 | >6.0 | --- | --- | None | Long | Frequent |
| | | | Apr-Nov | --- | --- | --- | --- | --- | --- | None |
| | | | Dec | 1.0-1.5 | >6.0 | --- | --- | None | --- | --- |
| RgC: | | | | | | | | | | |
| Redsprings | B | Very high | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| RnB: | | | | | | | | | | |
| Rentzel | C | Low | Jan-Mar | 1.5-3.0 | 2.0-3.5 | --- | --- | None | --- | None |
| | | | Apr-Dec | --- | --- | --- | --- | None | --- | None |

Table 32.--Water Features--Continued

| Map symbol and soil name | Hydro-logic group | Surface runoff | Month | Water table: Upper limit | Water table: Lower limit | Ponding: Surface water depth | Ponding: Duration | Ponding: Frequency | Flooding: Duration | Flooding: Frequency |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ft | Ft | Ft | | | | |
| SaC: | | | | | | | | | | |
| Sacul | C | High | Jan-Apr | 2.0-4.0 | 2.5-4.5 | --- | --- | None | --- | None |
| | | | May-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 2.0-4.0 | 2.5-4.5 | --- | --- | None | --- | None |
| SlC: | | | | | | | | | | |
| Sailes | B | Medium | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Sm: | | | | | | | | | | |
| Sardis | C | Negligible | Jan-May | 1.5-3.0 | 2.0-4.0 | --- | --- | None | Brief | Frequent |
| | | | May-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | --- | --- | --- | --- | None | Brief | Frequent |
| Manco | C | Negligible | Jan-May | 1.0-1.5 | >6.0 | --- | --- | None | Long | Frequent |
| | | | Jun-Nov | --- | --- | --- | --- | None | Long | Frequent |
| | | | Dec | 1.0-1.5 | >6.0 | --- | --- | None | Long | Frequent |
| So: | | | | | | | | | | |
| Socagee | D | Negligible | Jan-May | 0.0-1.5 | 0.5-2.0 | --- | --- | None | Brief | Frequent |
| | | | Jun-Nov | --- | --- | --- | --- | None | --- | None |
| | | | Dec | 0.0-1.5 | 0.5-2.0 | --- | --- | None | --- | --- |
| TnB: | | | | | | | | | | |
| Tenaha | B | Low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| TnD: | | | | | | | | | | |
| Tenaha | B | Medium | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| Ud: | | | | | | | | | | |
| Udorthents, gravelly | B | Low | Jan-Dec | --- | --- | --- | --- | None | --- | None |
| WrA: | | | | | | | | | | |
| Wrightsville | D | Negligible | Jan-Apr | 0.5-1.5 | 1.0-2.0 | 0.0-1.0 | Long | Frequent | --- | None |
| | | | May-Nov | --- | --- | --- | --- | --- | --- | None |
| | | | Dec | 0.5-1.5 | 1.0-2.0 | 0.0-1.0 | Long | Frequent | --- | None |

Table 33.--Physical Analyses of Selected Soils

(The abbreviation "COLE" means coefficient of linear extensibility. Dashes indicate that data were not available.)

| Soil name and sample number | Depth | Horizon | Particle-size distribution: Sand: Very coarse (2.0-1.0 mm) | Coarse (1.0-0.5mm) | Medium (0.5-0.25mm) | Fine (0.25-0.1 mm) | Very fine (0.1-0.05 mm) | Total (2.0-0.05 mm) | Total Silt | Total Clay | COLE | Bulk Density: 1/3- bar | Bulk Density: Oven Dry | Water Content: 1/3- bar | Water Content: 15-bar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | (Percent) | | | | | | | | cm/cm | g/cc | g/cc | Pct | Pct |
| Ashford (1, 3) | 0-3 | A | 0.0 | 0.3 | 0.8 | 7.1 | 7.3 | 15.5 | 42.8 | 41.7 | 0.052 | 0.79 | 0.92 | 20.5 | 16.1 |
| S93TX-067-006 | 3-17 | Bg | 0.0 | 0.0 | 0.3 | 5.7 | 7.2 | 13.2 | 32.5 | 54.3 | 0.086 | 1.32 | 1.69 | 28.9 | 18.6 |
| | 17-26 | Bgss1 | 0.0 | 0.0 | 0.1 | 3.9 | 6.1 | 10.1 | 29.9 | 60.0 | 0.096 | 1.36 | 1.79 | 27.9 | 20.9 |
| | 26-36 | Bgss2 | 0.1 | 0.1 | 0.2 | 4.3 | 5.9 | 10.6 | 29.9 | 59.5 | 0.107 | 1.38 | 1.87 | 29.2 | 21.5 |
| | 36-58 | Bgss3 | 0.0 | 0.0 | 0.3 | 4.4 | 5.3 | 10.0 | 28.6 | 61.4 | 0.116 | 1.43 | 1.99 | 27.0 | 22.0 |
| | 58-75 | Bgss4 | 0.0 | 0.2 | 0.2 | 3.8 | 5.3 | 9.5 | 28.0 | 62.5 | 0.127 | 1.42 | 2.03 | 26.6 | 21.9 |
| | 75-80 | Bgss5 | 0.0 | 0.0 | 0.2 | 2.4 | 3.6 | 6.2 | 19.3 | 74.5 | 0.152 | 1.23 | 1.88 | 37.7 | 26.1 |
| Bowie (1, 3) | 0-6 | Ap | 0.2 | 0.3 | 3.1 | 52.3 | 16.8 | 72.7 | 22.9 | 4.4 | --- | 1.44 | 1.50 | 0.0 | 3.2 |
| S94TX-067-002 | 6-10 | E | 0.1 | 0.2 | 1.8 | 50.0 | 15.9 | 68.0 | 25.6 | 6.4 | --- | --- | --- | 0.0 | 2.0 |
| | 10-19 | Bt1 | 0.2 | 0.2 | 2.0 | 38.8 | 12.1 | 53.3 | 21.3 | 25.4 | 0.022 | 1.62 | 1.73 | 16.5 | 9.3 |
| | 19-27 | Bt2 | 0.3 | 0.1 | 1.7 | 37.2 | 12.0 | 51.3 | 19.0 | 29.7 | 0.020 | 1.66 | 1.76 | 18.4 | 10.6 |
| | 27-41 | Btv/E1 | 0.1 | 0.1 | 2.3 | 42.4 | 14.1 | 59.0 | 18.8 | 22.2 | 0.010 | 1.71 | 1.76 | 14.7 | 8.1 |
| | 41-57 | Btv/E2 | 0.6 | 0.1 | 2.0 | 36.3 | 17.6 | 56.6 | 23.7 | 19.7 | 0.007 | 1.78 | 1.82 | 12.6 | 7.3 |
| | 57-73 | Bt/E | 0.2 | 0.2 | 1.4 | 26.6 | 18.3 | 46.7 | 24.4 | 28.9 | 0.013 | 1.74 | 1.81 | 16.8 | 10.8 |
| | 73-80 | Bt | 0.0 | 0.0 | 0.3 | 8.1 | 24.1 | 32.5 | 27.6 | 39.9 | 0.033 | 1.64 | 1.81 | 21.9 | 14.4 |
| Darco (1, 3) | 0-4 | A | 0.2 | 0.5 | 19.1 | 59.0 | 6.6 | 85.4 | 12.6 | 2.0 | 0.005 | 1.37 | 1.39 | 6.9 | 1.4 |
| S95TX-315-002 | 4-10 | E1 | - | 0.2 | 19.2 | 60.3 | 6.1 | 85.8 | 11.5 | 2.7 | 0.005 | 1.44 | 1.46 | 6.6 | 1.3 |
| | 10-28 | E2 | 0.1 | 0.1 | 19.8 | 61.2 | 5.5 | 86.7 | 11.0 | 2.3 | 0.002 | 1.69 | 1.70 | 12.1 | 1.1 |
| | 28-47 | E3 | TR | 0.2 | 19.9 | 61.2 | 5.4 | 86.7 | 11.1 | 2.2 | --- | --- | --- | --- | 1.3 |
| | 47-62 | E/B | 0.1 | 0.3 | 21.1 | 61.7 | 4.6 | 87.8 | 9.8 | 2.4 | 0.006 | 1.57 | 1.60 | 9.3 | 1.2 |
| | 62-74 | Bt1 | 0.1 | 0.3 | 18.6 | 52.9 | 2.6 | 74.5 | 3.4 | 22.1 | 0.006 | 1.72 | 1.75 | 10.4 | 7.3 |
| | 74-80 | Bt2 | 0.1 | 0.4 | 19.9 | 48.6 | 5.3 | 74.3 | 4.4 | 21.3 | 0.011 | 1.73 | 1.79 | 13.6 | 7.5 |
| Elrose (1, 3) | 0-3 | A | 0.5 | 0.5 | 3.6 | 44.1 | 21.2 | 69.9 | 27.2 | 2.9 | --- | 1.52 | 1.53 | --- | 2.7 |
| S94TX-067-003 | 3-13 | E | TR | 0.1 | 2.6 | 39.9 | 19.8 | 62.4 | 32.3 | 5.3 | --- | --- | --- | --- | 1.3 |
| | 13-27 | Bt1 | 0.1 | 0.2 | 2.0 | 30.3 | 17.2 | 49.8 | 30.6 | 19.6 | 0.012 | 1.62 | 1.68 | 13.3 | 6.7 |
| | 27-38 | Bt2 | 0.4 | 0.3 | 2.0 | 27.7 | 15.7 | 46.1 | 27.4 | 26.5 | 0.016 | 1.63 | 1.71 | 16.7 | 10.7 |
| | 38-51 | Bt3 | 1.0 | 0.6 | 1.8 | 24.5 | 13.3 | 41.2 | 21.0 | 37.8 | 0.017 | 1.64 | 1.73 | 19.7 | 14.0 |
| | 51-72 | Bt4 | 2.1 | 0.8 | 2.2 | 29.5 | 12.2 | 46.8 | 17.7 | 35.5 | 0.015 | 1.64 | 1.72 | 19.5 | 13.1 |
| | 72-80 | Bt5 | 5.2 | 1.4 | 2.9 | 30.1 | 12.5 | 52.1 | 15.0 | 32.9 | 0.008 | 1.74 | 1.79 | 17.2 | 12.6 |

Table 33.--Physical Analyses of Selected Soils--Continued

| Soil name and sample number | Depth | Horizon | Particle-size distribution: Sand: Very coarse (2.0-1.0 mm) | Coarse (1.0 0.5mm) | Medium (0.5-0.25mm) | Fine (0.25-0.1 mm) | Very fine (0.1-0.05 mm) | Total (2.0 0.05 mm) | Total Silt | Total Clay | COLE | Bulk Density: 1/3- bar | Oven Dry | Water Content: 1/3- bar | 15-bar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | (Percent) | | | | | | | | cm/cm | g/cc | g/cc | Pct | Pct |
| Erno (1, 3) | 0-3 | A | TR | 0.1 | 0.5 | 18.5 | 32.0 | 51.1 | 44.4 | 4.5 | --- | --- | --- | --- | 5.6 |
| S00TX-616-001 | 3-10 | E | TR | 0.2 | 0.5 | 17.6 | 33.0 | 51.3 | 43.6 | 5.1 | 0.002 | 1.60 | 1.61 | 17.4 | 3.1 |
| | 10-20 | Bt | TR | TR | 0.2 | 13.1 | 26.1 | 39.4 | 32.6 | 28.0 | 0.021 | 1.56 | 1.66 | 19.8 | 10.8 |
| | 20-38 | Btx | TR | 0.1 | 0.1 | 16.7 | 33.8 | 50.7 | 33.9 | 15.4 | 0.008 | 1.65 | 1.69 | 16.1 | 6.4 |
| | 38-46 | Btx/E1 | 0.1 | TR | 0.2 | 19.5 | 32.8 | 52.6 | 33.3 | 14.1 | 0.006 | 1.74 | 1.77 | 14.8 | 5.7 |
| | 46-73 | Btx/E2 | 0.1 | 0.1 | 0.3 | 15.5 | 36.0 | 51.9 | 35.2 | 12.9 | 0.009 | 1.83 | 1.88 | 13.0 | 5.1 |
| | 73-80 | Btx/E3 | --- | TR | 0.1 | 12.6 | 32.6 | 45.3 | 35.4 | 19.3 | 0.015 | 1.70 | 1.78 | 17.5 | 7.7 |
| Gladewater (1, 3) | 0-8 | A | TR | 0.1 | 0.1 | 0.2 | 0.5 | 0.9 | 11.2 | 87.9 | 0.206 | 0.98 | 1.72 | 49.7 | 35.1 |
| S93TX-067-001 | 8-12 | Bg | TR | 0.2 | 0.3 | 0.7 | 3.2 | 4.4 | 24.1 | 71.5 | 0.151 | 1.18 | 1.80 | 38.1 | 28.4 |
| | 12-19 | Bgss1 | 0.1 | 0.6 | 0.9 | 1.0 | 5.7 | 8.3 | 33.0 | 58.7 | 0.121 | 1.25 | 1.76 | 33.5 | 22.7 |
| | 19-27 | Bgss2 | 0.2 | 0.6 | 0.9 | 1.2 | 5.5 | 8.4 | 31.1 | 60.5 | 0.117 | 1.27 | 1.77 | 35.9 | 23.6 |
| | 27-42 | Bgss3 | 0.1 | 0.6 | 0.6 | 1.1 | 6.8 | 9.2 | 29.9 | 60.9 | 0.112 | 1.31 | 1.80 | 35.9 | 23.4 |
| | 42-60 | Bgss4 | 0.1 | 0.4 | 0.6 | 1.4 | 7.1 | 9.6 | 31.8 | 58.6 | 0.13 | 1.33 | 1.92 | 30.7 | 23.3 |
| | 60-80 | Bgss5 | 0.1 | 0.3 | 0.4 | 1.4 | 10.5 | 12.7 | 33.2 | 54.1 | 0.128 | 1.33 | 1.91 | 33.4 | 22.1 |
| Hainesville (1, 3) | 0-5 | A1 | TR | 0.1 | 6.2 | 69.5 | 14.1 | 89.9 | 8.2 | 1.9 | 0.002 | 1.46 | 1.47 | 2.8 | 1.4 |
| S95TX-315-001 | 5-11 | A2 | TR | 0.1 | 7.2 | 68.2 | 14.4 | 89.9 | 8.1 | 2.0 | 0.002 | 1.44 | 1.45 | 3.4 | 1.2 |
| | 11-24 | E | TR | 0.1 | 6.0 | 67.5 | 14.9 | 88.5 | 8.8 | 2.7 | 0.005 | 1.44 | 1.46 | 4.0 | 1.1 |
| | 24-41 | Bw | 0.1 | 0.1 | 7.3 | 68.9 | 13.2 | 89.6 | 7.3 | 3.1 | 0.004 | 1.48 | 1.50 | 4.8 | 1.3 |
| | 41-63 | Bw/E | TR | TR | 6.5 | 66.8 | 15.4 | 88.7 | 8.7 | 2.6 | 0.007 | 1.46 | 1.49 | 4.6 | 1.2 |
| | 63-76 | E/Bw1 | TR | TR | 5.9 | 66.5 | 17.3 | 89.7 | 9.3 | 1.0 | 0.002 | 1.50 | 1.51 | 16.9 | 0.9 |
| | 76-80 | E/Bw2 | TR | TR | 6.8 | 67.1 | 14.5 | 88.4 | 8.6 | 3.0 | --- | --- | --- | --- | 1.3 |
| Latch (2, 4) | 0-5 | A | 0.2 | 2.3 | 13.8 | 49.3 | 20.8 | 86.4 | 10.7 | 2.9 | --- | --- | --- | --- | --- |
| S96TX-315-001 | 5-16 | E1 | 0.1 | 1.6 | 14.1 | 50.9 | 20.0 | 86.7 | 9.9 | 3.4 | 0.007 | 1.36 | 1.39 | 25.0 | --- |
| | 16-33 | E2 | 0.1 | 1.8 | 16.7 | 52.4 | 18.5 | 89.5 | 7.9 | 2.6 | 0.002 | 1.43 | 1.44 | 22.5 | --- |
| | 33-56 | E3 | 0.0 | 1.7 | 15.6 | 56.2 | 18.8 | 92.3 | 6.4 | 1.3 | 0.014 | 1.46 | 1.52 | 20.8 | --- |
| | 56-69 | Bt | 0.0 | 0.8 | 6.6 | 35.4 | 25.7 | 68.5 | 12.6 | 18.9 | 0.032 | 1.52 | 1.67 | 20.6 | --- |
| | 69-75 | Btg1 | 0.3 | 0.2 | 0.8 | 14.1 | 31.2 | 46.6 | 28.4 | 25.0 | 0.040 | 1.46 | 1.64 | 25.3 | --- |
| | 75-80 | Btg2 | 0.1 | 0.0 | 0.3 | 11.4 | 23.7 | 35.5 | 34.2 | 30.3 | --- | --- | --- | --- | --- |
| Sailes (1, 3) | 0-6 | Ap | 0.1 | 0.3 | 1.7 | 35.3 | 25.8 | 63.2 | 32.3 | 4.5 | 0.008 | 1.56 | 1.60 | 14.7 | 2.6 |
| S95TX-067-001 | 6-13 | Bt1 | TR | 0.1 | 1.3 | 26.8 | 22.7 | 50.9 | 33.9 | 15.2 | 0.010 | 1.60 | 1.65 | 14.5 | 5.4 |
| | 13-28 | Bt2 | --- | 0.1 | 0.9 | 23.6 | 19.6 | 44.2 | 33.5 | 22.3 | 0.012 | 1.61 | 1.67 | 15.4 | 8.2 |
| | 28-52 | Bt3 | TR | 0.1 | 0.9 | 26.0 | 20.9 | 47.9 | 27.8 | 24.3 | 0.014 | 1.64 | 1.71 | 16.8 | 8.7 |
| | 52-63 | Bt4 | TR | TR | 0.8 | 28.3 | 20.7 | 49.8 | 25.7 | 24.5 | 0.014 | 1.65 | 1.72 | 16.8 | 8.9 |
| | 63-72 | Bt5 | 0.3 | 0.3 | 0.9 | 29.1 | 21.5 | 52.1 | 24.5 | 23.4 | 0.012 | 1.70 | 1.76 | 15.5 | 9.2 |
| | 72-80 | Bt6 | --- | TR | 1.0 | 35.5 | 21.6 | 58.1 | 21.3 | 20.6 | 0.008 | 1.72 | 1.76 | 14.3 | 8.0 |

Footnotes

1 Analyses by Soil Survey Laboratory, USDA-NRCS, Lincoln, Nebraska.

2 Analyses by Soil Charactierization Laboratory, Texas A&M University, College Station, Texas.

3 Location of pedon sample is the same as that given in the series as described in the section "Soil Series and Their Morphology."

4 Location of the pedon sampled is the same as the Latch-Mollville complex, 0 to 2 percent slopes described in the "Detailed Soil Map Unit" section.

Table 34.--Chemical Analyses of Selected Soils

(Dashes indicate that analyses were not made)

| Soil name and sample number | Depth | Horizon | Organic carbon | pH 1:1 (soil: water) | Extractable bases | | | | Total Acid- ity | Cation Exchange capacity (pH 7) ($NH_4OAc$) | Base Satur- ation ($NH_4OAc$) | Extract- able Al | Extract- able Fe (dith cit) | Extract- able Mn (dith cit) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Ca | Mg | K | Na | | | | | | |
| | In | | Pct | pH | Meq/100 grams | | | | | Pct | Pct | Ppm | Ppm | Ppm |
| Ashford (1, 3) | 0-3 | A | 3.28 | 4.4 | 9.0 | 2.0 | 0.6 | 0.0 | 18.0 | 25.2 | 46 | 0.1 | 0.5 | 0.0 |
| S93TX-067-006 | 3-17 | Bg | 0.79 | 4.5 | 10.2 | 2.3 | 0.4 | 2.0 | 17.5 | 26.7 | 56 | 0.1 | 1.2 | 0.0 |
| | 17-26 | Bgss1 | 0.36 | 4.7 | 14.1 | 2.8 | 0.3 | 0.2 | 16.3 | 30.8 | 56 | 0.2 | 1.2 | 0.0 |
| | 26-36 | Bgss2 | 0.28 | 4.4 | 13.7 | 3.0 | 0.4 | 0.7 | 23.7 | 29.8 | 60 | 0.1 | 1.3 | 0.0 |
| | 36-58 | Bgss3 | 0.18 | 4.1 | 17.6 | 3.6 | 0.4 | 1.1 | 11.6 | 30.8 | 74 | 0.1 | 1.3 | 0.0 |
| | 58-75 | Bgss4 | 0.15 | 4.0 | 20.5 | 4.2 | 0.5 | 1.6 | 9.0 | 32.6 | 82 | 0.1 | 1.3 | 0.0 |
| | 75-80 | Bgss5 | 0.11 | 4.3 | 28.7 | 6.3 | 0.7 | 2.1 | 9.2 | 44.2 | 86 | 0.1 | 1.4 | 0.0 |
| Bowie (1, 3) | 0-6 | Ap | 1.35 | 4.4 | 1.3 | 0.1 | 0.1 | 0.1 | 3.4 | 3.3 | 48 | 0.3 | 0.2 | --- |
| S94TX-067-002 | 6-10 | E | 0.24 | 4.7 | 0.6 | 0.1 | 0.0 | 0.0 | 2.4 | 2.0 | 35 | 0.4 | --- | --- |
| | 10-19 | Bt1 | 0.19 | 6.1 | 4.8 | 0.5 | 0.1 | 0.1 | 3.9 | 7.2 | 76 | 0.1 | --- | --- |
| | 19-27 | Bt2 | 0.12 | 5.2 | 3.1 | 2.0 | 0.1 | 0.0 | 6.2 | 8.7 | 60 | 1.1 | --- | --- |
| | 27-41 | Btv/E1 | 0.05 | 5.0 | 0.5 | 1.4 | 0.1 | 0.1 | 6.0 | 5.9 | 36 | 1.9 | --- | --- |
| | 41-57 | Btv/E2 | 0.04 | 4.7 | 0.1 | 0.7 | 0.1 | 0.0 | 4.3 | 4.2 | 21 | 2.0 | --- | --- |
| | 57-73 | Bt/E | 0.03 | 4.6 | 0.0 | 0.7 | 0.1 | 0.0 | 7.3 | 7.6 | 11 | 4.9 | --- | --- |
| | 73-80 | Bt | 0.04 | 4.8 | 0.1 | 0.8 | 0.2 | 0.0 | 11.5 | 11.1 | 10 | 8.3 | --- | --- |
| Darco (1, 3) | 0-4 | A | 0.58 | 5.3 | 1.3 | 0.2 | 0.1 | TR | 1.9 | 2.4 | 67 | --- | --- | --- |
| S95TX-315-002 | 4-10 | E1 | 0.17 | 5.1 | 0.3 | 0.1 | TR | - | 1.5 | 1.0 | 40 | --- | --- | --- |
| | 10-28 | E2 | 0.06 | 5.5 | 0.3 | 0.1 | 0.1 | TR | 0.9 | 0.8 | 63 | --- | --- | --- |
| | 28-47 | E3 | - | 5.3 | 0.4 | 0.1 | TR | TR | 0.6 | 0.6 | 83 | --- | --- | --- |
| | 47-62 | E/B | 0.03 | 5.5 | 0.3 | 0.2 | TR | TR | 0.8 | 0.7 | 71 | --- | --- | --- |
| | 62-74 | Bt1 | 0.06 | 4.7 | 0.3 | 0.4 | 0.1 | TR | 4.5 | 4.0 | 20 | --- | --- | --- |
| | 74-80 | Bt2 | 0.04 | 4.7 | 0.4 | 0.5 | 0.1 | TR | 4.0 | 3.8 | 26 | --- | --- | --- |
| Elrose (1, 3) | 0-3 | A | 1.12 | 4.2 | 0.8 | 0.1 | TR | - | 3.0 | 2.9 | 31 | 1.4 | 0.4 | - |
| S94TX-067-003 | 3-13 | E | 0.17 | 5.2 | 0.5 | 0.1 | --- | TR | 1.0 | 1.2 | 50 | 0.6 | --- | --- |
| | 13-27 | Bt1 | 0.13 | 5.8 | 2.4 | 0.9 | 0.2 | - | 2.9 | 5.0 | 70 | 0.4 | --- | --- |
| | 27-38 | Bt2 | 0.13 | 5.6 | 2.7 | 1.5 | 0.2 | 0.2 | 3.5 | 6.4 | 72 | 0.4 | --- | --- |
| | 38-51 | Bt3 | 0.08 | 5.6 | 1.9 | 2.3 | 0.1 | 0.1 | 5.5 | 7.9 | 56 | 0.6 | --- | --- |
| | 51-72 | Bt4 | 0.06 | 5.3 | 1.1 | 2.4 | 0.1 | TR | 5.9 | 7.2 | 50 | 0.7 | --- | --- |
| | 72-80 | Bt5 | 0.06 | 5.5 | 1.1 | 2.2 | 0.1 | 0.3 | 5.9 | 7.9 | 47 | 0.6 | --- | --- |

Table 34.--Chemical Analyses of Selected Soils--Continued

| Soil name and sample number | Depth | Horizon | Organic carbon | pH 1:1 (soil: water) | Extractable bases Ca | Mg | K | Na | Total Acid-ity | Cation Exchange capacity (pH 7) | Base Satur-ation (Sum) | Extract-able Al | Extract-able Fe (dith cit) | Extract-able Mn (dith cit) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | Pct | pH | Meq/100grams | | | | | | Pct | Ppm | Ppm | Ppm |
| Erno (1, 3) | 0-3 | A | --- | 6.0 | 6.4 | 0.4 | 0.1 | 0.3 | 10.4 | 6.7 | 107 | --- | 0.5 | --- |
| S00TX-616-001 | 3-10 | E | --- | 6.3 | 3.7 | 0.1 | 0.1 | 0.3 | 2.8 | 3.8 | 111 | --- | 0.5 | --- |
| | 10-20 | Bt | --- | 5.3 | 2.4 | 0.6 | 0.2 | 0.4 | 7.6 | 9.6 | 38 | 2.7 | 1.4 | --- |
| | 20-38 | Btx | --- | 5.1 | 1.0 | 0.2 | 0.1 | 0.4 | 5.4 | 4.9 | 35 | 2.0 | 0.8 | --- |
| | 38-46 | Btx/E1 | --- | 5.2 | 2.7 | 1.3 | 0.1 | 0.4 | 3.4 | 4.3 | 105 | 1.1 | 0.8 | --- |
| | 46-73 | Btx/E2 | --- | 4.9 | 1.2 | 0.7 | 0.1 | 0.3 | 4.2 | 3.9 | 59 | 1.7 | 0.5 | --- |
| | 73-80 | Btx/E3 | --- | 4.7 | 1.1 | 1.1 | 0.2 | 0.3 | 5.6 | 5.8 | 47 | 2.9 | 0.9 | --- |
| Gladewater (1, 3) | 0-8 | A | 2.79 | 5.5 | 50.3 | 7.8 | 1.5 | 0.5 | 18.1 | 73.4 | 82 | --- | 1.6 | 0.2 |
| S93TX-067-001 | 8-12 | Bg | 1.16 | 4.9 | 33.0 | 5.7 | 1.0 | 0.5 | 16.9 | 52.2 | 77 | 1.5 | 1.9 | 0.2 |
| | 12-19 | Bgss1 | 0.48 | 4.6 | 17.8 | 3.8 | 0.5 | 0.4 | 19.6 | 39.5 | 57 | 8.5 | 1.5 | TR |
| | 19-27 | Bgss2 | 0.36 | 4.5 | 16.1 | 4.1 | 0.6 | 0.6 | 24.1 | 41.7 | 51 | 12.5 | 1.2 | TR |
| | 27-42 | Bgss3 | 0.26 | 4.6 | 16.9 | 4.8 | 0.7 | 1.0 | 21.6 | 40.8 | 57 | 10.4 | 1.2 | TR |
| | 42-60 | Bgss4 | 0.22 | 4.6 | 17.3 | 5.1 | 0.6 | 1.7 | 18.2 | 38.6 | 64 | 7.2 | 1.1 | TR |
| | 60-80 | Bgss5 | 0.20 | 4.1 | 17.8 | 5.6 | 0.7 | 3.1 | 14.8 | 36.4 | 75 | 5.5 | 0.9 | --- |
| Hainesville (1, 3) | 0-5 | A1 | 0.26 | 5.4 | 1.1 | 0.2 | TR | 0.1 | 1.4 | 2.1 | 67 | --- | --- | --- |
| S95TX-315-001 | 5-11 | A2 | 0.30 | 5.4 | 0.9 | 0.2 | TR | 0.1 | 1.3 | 2.0 | 60 | --- | --- | --- |
| | 11-24 | E | 0.11 | 5.1 | 0.5 | 0.2 | TR | 0.1 | 0.7 | 1.5 | 53 | --- | --- | --- |
| | 24-41 | Bw | 0.06 | 5.1 | 0.4 | 0.2 | TR | 0.1 | 0.8 | 1.6 | 44 | --- | --- | --- |
| | 41-63 | Bw/E | 0.04 | 5.1 | 0.5 | 0.1 | TR | TR | 0.8 | 1.2 | 50 | --- | --- | --- |
| | 63-76 | E/Bw1 | 0.03 | 5.2 | 0.5 | 0.1 | TR | - | 0.6 | 0.8 | 75 | --- | --- | --- |
| | 76-80 | E/Bw2 | 0.05 | 5.3 | 0.7 | 0.1 | TR | TR | 0.1 | 1.4 | 57 | --- | --- | --- |
| Latch (2, 4) | 0-5 | A | 0.92 | 5.0 | 2.1 | 0.3 | 0.1 | --- | --- | 4.8 | 52 | --- | --- | --- |
| S96TX-315-001 | 5-16 | E1 | 0.22 | 4.7 | 0.4 | 0.2 | 0.1 | 0.0 | --- | 3.3 | 21 | --- | --- | --- |
| | 16-33 | E2 | 0.11 | 4.5 | 0.1 | 0.2 | 0.0 | 0.0 | --- | 2.7 | 11 | --- | --- | --- |
| | 33-56 | E3 | 0.05 | 4.9 | 0.3 | 0.1 | 0.0 | --- | --- | 2.2 | 18 | --- | --- | --- |
| | 56-69 | Bt | 0.14 | 4.7 | 2.8 | 2.1 | 0.2 | 0.1 | --- | 9.3 | 56 | --- | --- | --- |
| | 69-75 | Btg1 | 0.19 | 4.1 | 1.7 | 2.3 | 0.2 | 0.2 | --- | 11.7 | 38 | --- | --- | --- |
| | 75-80 | Btg2 | 0.23 | 3.8 | 1.0 | 2.5 | 0.3 | 0.3 | --- | 14.5 | 28 | --- | --- | --- |
| Mooreville (2, 3) | 0-4 | A1 | 3.26 | 5.1 | 5.5 | 2.2 | 0.3 | 0.1 | --- | 18.9 | 43 | 0.1 | --- | --- |
| S96TX-067-001 | 4-9 | A2 | 1.08 | 5.2 | 2.2 | 1.4 | 0.1 | --- | --- | 10.3 | 36 | 0.2 | --- | --- |
| | 9-22 | Bw1 | 0.42 | 4.9 | 1.3 | 1.3 | 0.1 | 0.1 | --- | 7.0 | 40 | 1.8 | --- | --- |
| | 22-29 | Bw2 | 0.32 | 4.8 | 1.4 | 1.6 | 0.1 | 0.1 | --- | 11.1 | 29 | 3.3 | --- | --- |
| | 29-37 | Bw3 | 0.28 | 4.8 | 0.8 | 1.3 | 0.1 | 0.1 | --- | 11.8 | 19 | 4.5 | --- | --- |
| | 37-57 | Bg1 | 0.23 | 4.7 | 0.6 | 1.1 | 0.1 | 0.1 | --- | 10.7 | 18 | 4.6 | --- | --- |
| | 57-80 | Bg2 | 0.10 | 4.5 | 0.2 | 0.4 | 0.0 | 0.1 | --- | 5.7 | 12 | 2.6 | --- | --- |

Table 34.--Chemical Analyses of Selected Soils--Continued

| Soil name and sample number | Depth | Horizon | Organic carbon | pH 1:1 (soil: water) | Extractable bases Ca | Extractable bases Mg | Extractable bases K | Extractable bases Na | Total Acid-ity | Cation Exchange capacity (pH 7) | Base Satur-ation (Sum) | Extract-able Al | Extract-able Fe (dith cit) | Extract-able Mn (dith cit) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | | Pct | pH | Meq/100grams | | | | | | Pct | Ppm | Ppm | Ppm |
| Sailes (1, 3) | 0-6 | Ap | 0.75 | 4.5 | 0.6 | 0.2 | 0.1 | --- | 4.2 | 3.2 | 28 | 0.1 | 0.5 | --- |
| S95TX-067-001 | 6-13 | Bt1 | 0.30 | 5.5 | TR | --- | --- | --- | 2.9 | 4.8 | 38 | 0.1 | 1.0 | --- |
| | 13-28 | Bt2 | 0.11 | 5.9 | 4.1 | 0.9 | 0.1 | 0.1 | 3.3 | 6.5 | 80 | 0.2 | 1.6 | --- |
| | 28-52 | Bt3 | 0.06 | 4.6 | 0.6 | 1.7 | 0.1 | 0.1 | 5.7 | 6.1 | 41 | 0.2 | 2.0 | --- |
| | 52-63 | Bt4 | 0.03 | 5.0 | 0.1 | 0.7 | 0.1 | 0.1 | 7.2 | 6.1 | 16 | 0.2 | 1.9 | --- |
| | 63-72 | Bt5 | 0.04 | 5.1 | --- | 0.6 | 0.1 | 0.1 | 6.9 | 6.0 | 13 | 0.2 | 2.2 | --- |
| | 72-80 | Bt6 | 0.04 | 5.0 | --- | 0.5 | 0.1 | 0.1 | 5.6 | 5.1 | 14 | 0.2 | 1.8 | --- |

Footnotes

1 Analyses by Soil Survey Laboratory, USDA-NRCS, Lincoln, Nebraska.

2 Analyses by Soil Charactierization Laboratory, Texas A&M University, College Station, Texas.

3 Location of pedon sample is the same as that given in the series as described in the section "Soil Series and Their Morphology."

4 Location of the pedon sampled is the Latch-Mollville complex, 0 to 2 percent slopes described in the "Detailed Soil Map Unit" section.

Table 35.--Clay Mineralogy of Selected Soils

(Analysis by National Soil Survey Laboratory, USDA-NRCS, Lincoln, Nebraska. Relative Peak Size; 5-Very large; 4-Large; 3-Medium; 2-Small; 1-Very small. Dashes indicate that none of the mineral was detected)

| Soil name and sample number | Depth | Horizon | Peak Size | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Smectite | Vermiculite | Kaolinite | Mica | Smectite -Mica | Quartz | Vermiculite-Mica | Hematite | Goethite |
| | In | | | | | | | | | | |
| Ashford (1, 3) | 0-3 | A | 3 | --- | 3 | 1 | --- | 1 | --- | --- | --- |
| S93TX-067-006 | 26-36 | Bgss2 | 3 | --- | 3 | 1 | --- | 2 | --- | --- | --- |
| | 36-58 | Bgss3 | 2 | --- | 3 | 1 | --- | 1 | --- | --- | --- |
| | 58-75 | Bgss4 | 3 | --- | 3 | 1 | --- | 2 | --- | --- | --- |
| | 75-80 | Bgss5 | 4 | --- | 3 | 2 | --- | 2 | --- | --- | --- |
| Bowie (1, 3) S94TX-067-002 | 0-6 | Ap | --- | 1 | 2 | 1 | --- | 2 | --- | --- | --- |
| Darco (1, 3) S95TX-315-002 | 62-74 | Bt1 | --- | 2 | 5 | 1 | --- | --- | --- | 1 | 2 |
| Elrose (1, 3) S94TX-067-003 | 0-3 | A | --- | --- | 2 | 1 | 1 | 1 | 1 | --- | --- |
| Gladewater (1, 3) | 0-8 | A | 3 | --- | 2 | 1 | --- | 1 | --- | --- | --- |
| S93TX-067-001 | 12-19 | Bgss1 | 3 | --- | 2 | 1 | --- | 1 | --- | --- | --- |
| | 27-42 | Bgss3 | 4 | --- | 3 | --- | --- | 1 | --- | --- | --- |
| Redsprings (2, 3) | 9-26 | Bt1 | --- | --- | 5 | 5 | --- | 3 | --- | --- | --- |
| S98TX-067-001 | 26-44 | Bt2 | --- | 1 | 5 | 5 | --- | 3 | --- | --- | --- |
| Sailes (1, 3) S95TX-067-001 | 13-28 | Bt2 | --- | 1 | 3 | 2 | --- | 1 | --- | 1 | 1 |

Footnotes

1 Analyses by Soil Survey Laboratory, USDA-NRCS, Lincoln, Nebraska.

2 Analyses by Soil Charactierization Laboratory, Texas A&M University, College Station, Texas.

3 Location of pedon sample is the same as that given in the series as described in the section "Soil Series and Their Morphology."

Table 36.--Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

| Soil name | Family or higher taxonomic class |
|---|---|
| Alazan | Fine-loamy, siliceous, semiactive, thermic Aquic Glossudalfs |
| Ashford | Very-fine, smectitic, thermic Chromic Dystraquerts |
| Bernaldo | Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs |
| Bibb | Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents |
| Bowie | Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults |
| Briley | Loamy, siliceous, semiactive, thermic Arenic Paleudults |
| Cuthbert | Fine, mixed, semiactive, thermic Typic Hapludults |
| Cypress | Fine, mixed, superactive, acid, thermic Typic Fluvaquents |
| Darco | Loamy, siliceous, semiactive, thermic Grossarenic Paleudults |
| Duffern | Thermic, coated Lamellic Quartzipsamments |
| Eastwood | Fine, smectitic, thermic Chromic Vertic Hapludalfs |
| Elrose | Fine-loamy, siliceous, semiactive, thermic Typic Paleudalfs |
| Erno | Fine-loamy, siliceous, semiactive, thermic Fragic Paleudalfs |
| Eylau | Fine-loamy, siliceous, semiactive, thermic Fragiaquic Paleudults |
| Gallime | Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs |
| Gladewater | Very-fine, smectitic, thermic Chromic Epiaquerts |
| Guyton | Fine-silty, siliceous, active, thermic Typic Glossaqualfs |
| Hainesville | Thermic, coated Lamellic Quartzipsamments |
| Hannahatchee | Fine-loamy, siliceous, active, thermic Dystric Fluventic Eutrudepts |
| Iulus | Coarse-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts |
| Kildare | Fine-loamy, siliceous, active, thermic Typic Fragiaquults |
| Kirvin | Fine, mixed, semiactive, thermic Typic Hapludults |
| Kullit | Fine-loamy, siliceous, semiactive, thermic Aquic Paleudults |
| Latch | Loamy, siliceous, semiactive, thermic Grossarenic Paleudalfs |
| Latex | Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs |
| Lilbert | Loamy, siliceous, semiactive, thermic Arenic Plinthic Paleudults |
| Manco | Fine-silty, siliceous, active, acid, thermic Fluvaquentic Endoaquepts |
| Mantachie | Fine-loamy, siliceous, active, acid, thermic Fluventic Endoaquepts |
| Metcalf | Fine-silty, siliceous, semiactive, thermic Glossaquic Paleudalfs |
| Mollville | Fine-loamy, siliceous, active, thermic Typic Glossaqualfs |
| Mooreville | Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts |
| Redsprings | Fine, kaolinitic, thermic Ultic Hapludalfs |
| Rentzel | Loamy, siliceous, semiactive, thermic Arenic Plinthaquic Paleudults |
| Sacul | Fine, mixed, active, thermic Aquic Hapludults |
| Sailes | Fine-loamy, siliceous, semiactive, thermic Typic Paleudults |
| Sardis | Fine-silty, siliceous, active, thermic Fluvaquentic Dystrudepts |
| Socagee | Fine-silty, siliceous, active, acid, thermic Fluvaquentic Epiaquepts |
| Tenaha | Loamy, siliceous, semiactive, thermic Arenic Hapludults |
| Thage | Fine-loamy, siliceous, semiactive, thermic Fragiaquic Paleudalfs |
| Udorthents | Udorthents |
| Wrightsville | Fine, mixed, active, thermic Typic Glossaqualfs |

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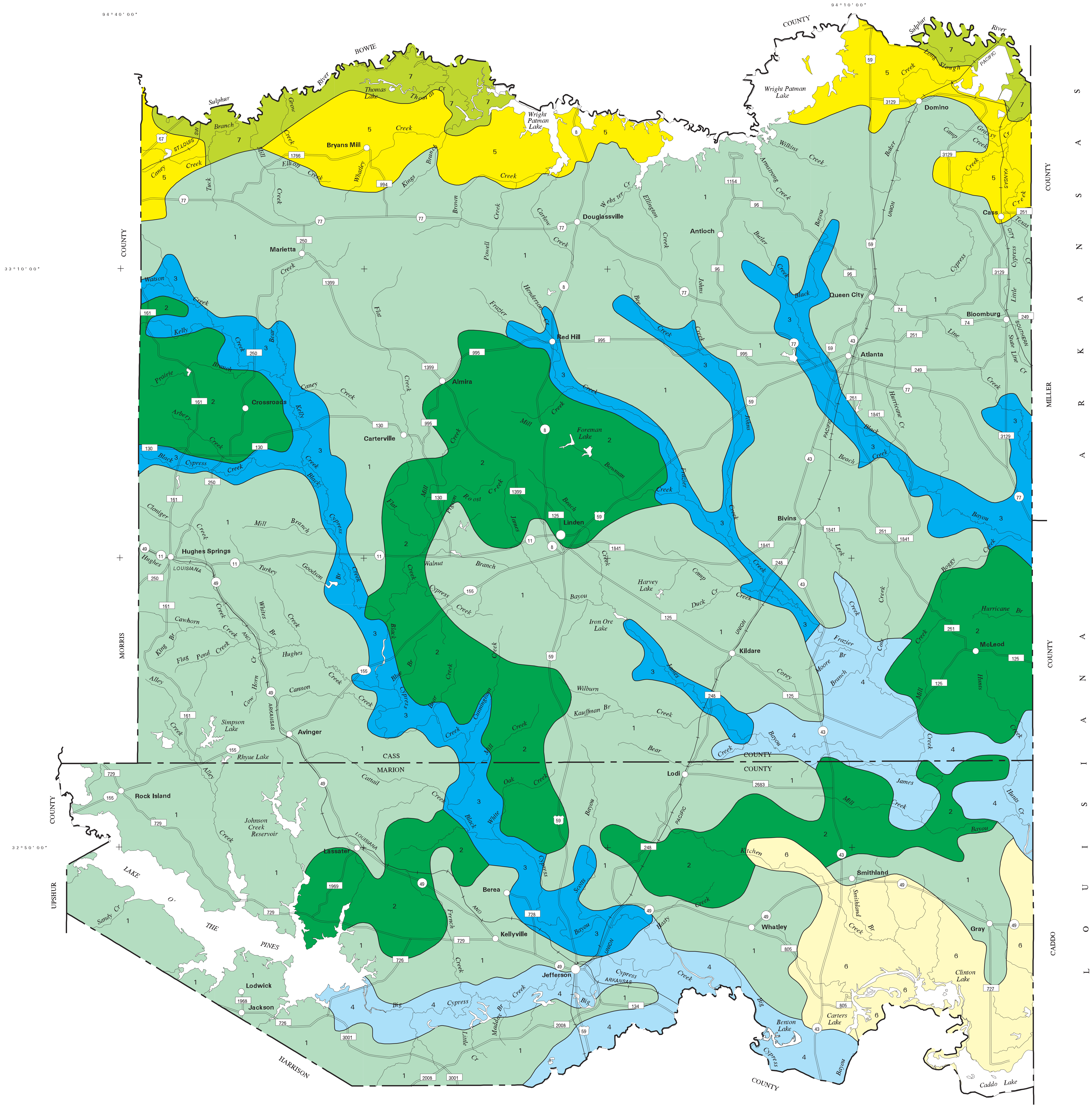



LEGEND

| | |
|---|---|
| 1 | Cuthbert-Bowie-Kirvin |
| 2 | Tenaha-Lilbert-Darco |
| 3 | Mantachie |
| 4 | Gallime-Latch-Mollville |
| 5 | Eastwood-Latex-Metcalf |
| 6 | Metcalf |
| 7 | Gladewater |

N

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TEXAS AGRICULTURAL EXPERIMENT STATION

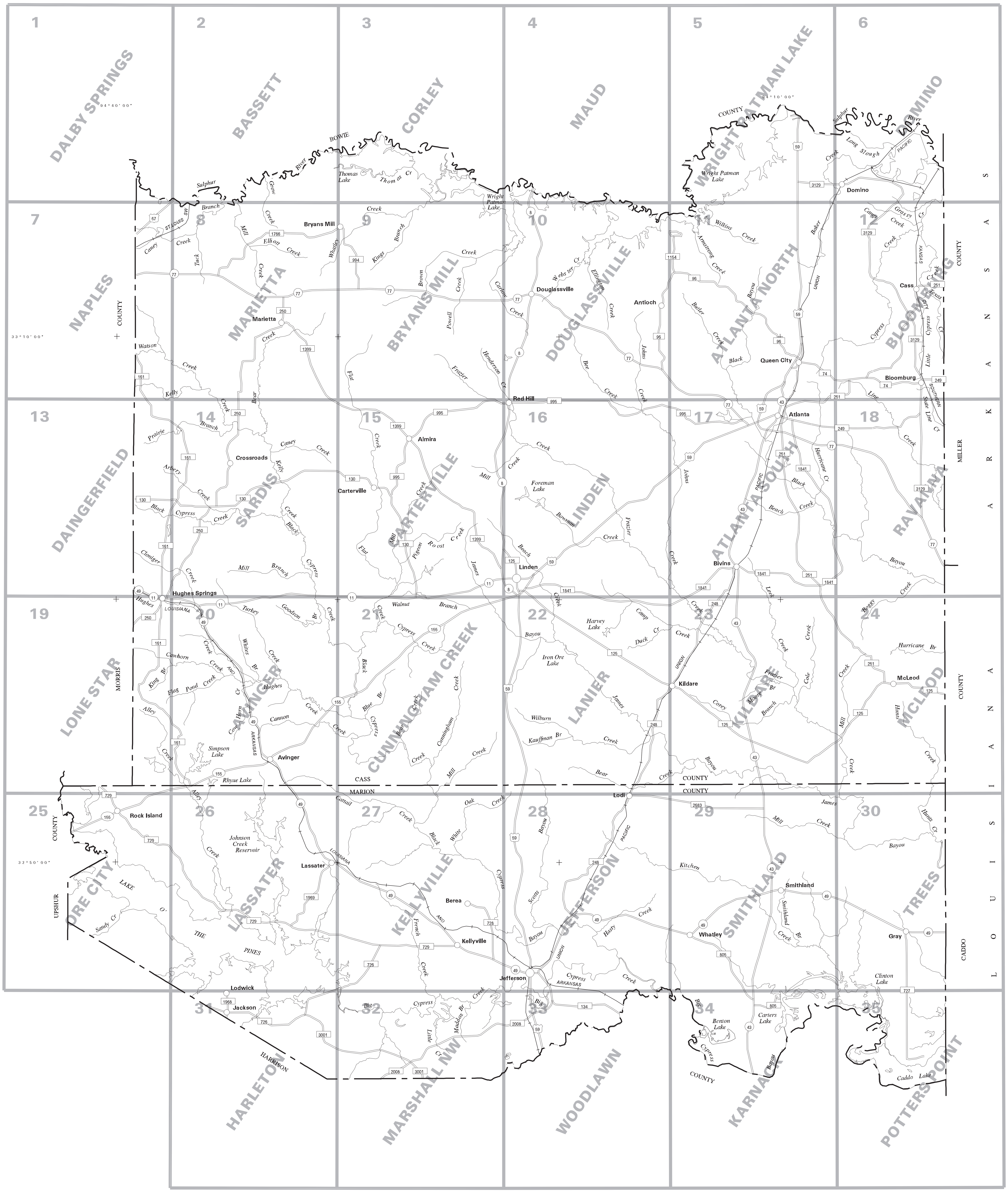
# GENERAL SOIL MAP
## MARION AND CASS COUNTIES TEXAS

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:155000

*Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.*




INDEX TO MAP SHEETS
MARION AND CASS COUNTIES
TEXAS

MILES

KILOMETERS

SCALE = 1:155000

# SOIL LEGEND

Soil map symbols and map unit names are alphabetical. Map symbols are letters. The first letter, always a capital, is the initial letter of the soil series or miscellaneous unit name. The second letter is generally lowercase. The third letter, if used, is a capital letter and generally indicates slope class. Where the third letter is not used, the slope is nearly level or it is a miscellaneous unit. Also, some miscellaneous units are represented by symbols with all capital letters.

| SYMBOL | NAME |
|---|---|
| AaB | Alazan fine sandy loam, 0 to 2 percent slopes |
| AsA | Ashford clay, 0 to 1 percent slopes, ponded |
| BaB | Bernaldo fine sandy loam, 1 to 3 percent slopes |
| BaD | Bernaldo fine sandy loam, 3 to 8 percent slopes |
| Bg | Bibb fine sandy loam, frequently flooded |
| BoC | Bowie fine sandy loam, 2 to 5 percent slopes |
| BrB | Briley loamy fine sand, 2 to 5 percent slopes |
| CrF | Cuthbert and Redsprings soils, 5 to 15 percent slopes |
| CrG | Cuthbert and Redsprings soils, 15 to 40 percent slopes, stony |
| CtE | Cuthbert fine sandy loam, 5 to 15 percent slopes |
| CuE | Cuthbert gravelly fine sandy loam, 5 to 15 percent slopes |
| Cy | Cypress clay loam, submerged |
| DaB | Darco loamy fine sand, 2 to 5 percent slopes |
| DaE | Darco loamy fine sand, 8 to 15 percent slopes |
| DAM | Dam |
| DuA | Duffern fine sand, 1 to 5 percent slopes |
| EeB | Eastwood very fine sandy loam, 1 to 5 percent slopes |
| EeD | Eastwood very fine sandy loam, 5 to 15 percent slopes |
| ElA | Elrose fine sandy loam, 2 to 5 percent slopes |
| EtA | Erno-Thage complex, 0 to 2 percent slopes |
| EyB | Eylau very fine sandy loam, 0 to 2 percent slopes |
| GaA | Gallime fine sandy loam, 1 to 5 percent slopes |
| GaC | Gallime-Guyton complex, 0 to 2 percent slopes |
| Gf | Gladewater clay, frequently flooded |
| HaA | Hainesville fine sand, 0 to 2 percent slopes |
| Hb | Hannahatchee fine sandy loam, occasionally flooded |
| Iu | Iulus fine sandy loam, frequently flooded |
| KiC | Kirvin gravelly fine sandy loam, 2 to 5 percent slopes |
| KiD | Kirvin soils, graded, 2 to 8 percent slopes |
| KrC | Kirvin very fine sandy loam, 2 to 5 percent slopes |
| KuA | Kullit very fine sandy loam, 0 to 2 percent slopes |
| LcB | Latch loamy fine sand, 0 to 2 percent slopes |
| LmB | Latch-Mollville complex, 0 to 2 percent slopes |
| LtB | Latex fine sandy loam, 1 to 3 percent slopes |
| LuC | Lilbert loamy fine sand, 2 to 5 percent slopes |
| Mf | Mantachie loam, frequently flooded |
| MiA | Metcalf silt loam, 0 to 2 percent slopes |
| MkA | Mollville-Kildare complex, 0 to 1 percent slopes |
| MlA | Mollville loam, 0 to 1 percent slopes |
| Mm | Mooreville-Mantachie complex, frequently flooded |
| RgC | Redsprings gravelly fine sandy loam, 2 to 5 percent slopes |
| RnB | Rentzel loamy fine sand, 0 to 3 percent slopes |
| SaC | Sacul very fine sandy loam, 1 to 5 percent slopes |
| SlC | Sailes fine sandy loam, 1 to 5 percent slopes |
| Sm | Sardis-Manco complex, frequently flooded |
| So | Socagee silty clay loam, frequently flooded |
| SPY | Spillway |
| TnB | Tenaha loamy fine sand, 1 to 5 percent slopes |
| TnD | Tenaha loamy fine sand, 5 to 15 percent slopes |
| Ud | Udorthents, gravelly |
| W | Water |
| WrA | Wrightsville silt loam, 0 to 1 percent slopes, ponded |

# CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

## CULTURAL FEATURES

BOUNDARIES

National, state, or province

County or parish

Field sheet matchline and neatline

Quadrangle matchline (shown in white)

ROAD EMBLEM & DESIGNATIONS

Federal 287

State 52

## WATER FEATURES

DRAINAGE

Unclassified stream

Drainage end (indicates direction of flow)

## SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS AaB BaB

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
DALBY SPRINGS QUADRANGLE
SHEET NUMBER 1 OF 35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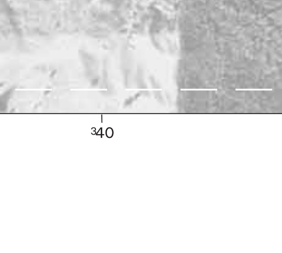
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

2 BASSETT
7 NAPLES
8 MARIETTA

INDEX TO ADJOINING 7.5 MAPS

DALBY SPRINGS, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

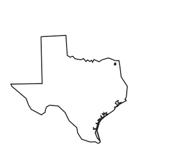
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
BASSETT QUADRANGLE
SHEET NUMBER 2 OF 35


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the Natural Resources Conservation Service from 1995-1996 aerial photography. Hydrography and cultural features were acquired from NRCS and edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



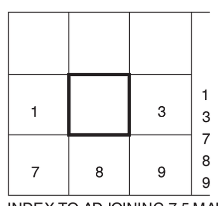
QUADRANGLE LOCATION

SCALE 1:24000

1 — 0 — 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 — 0 — 1
KILOMETERS




1 DALBY SPRINGS
3 CORLEY
7 NAPLES
8 MARIETTA
9 BRYANS MILL

INDEX TO ADJOINING 7.5 MAPS

# BASSETT, TEXAS

7.5 MINUTE SERIES
SHEET NUMBER 2 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE




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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

2 BASSETT
4 MAUD
8 MARIETTA
9 BRYANS MILL
10 DOUGLASSVILLE

CORLEY, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
MAUD QUADRANGLE
SHEET NUMBER 4 OF 35


This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the Natural Resources Conservation Service from 1995-1996 aerial photography. Hydrography and cultural features were acquired from NRCS and edited to conform with the features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| | | |
| 3 | | 5 |
| 9 | 10 | 11 |

3 CORLEY
5 WRIGHT PATMAN LAKE
9 BRYANS MILL
10 DOUGLASSVILLE
11 ATLANTA NORTH

INDEX TO ADJOINING 7.5 MAPS

# MAUD, TEXAS

7.5 MINUTE SERIES
SHEET NUMBER 4 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

4 MAUD
6 DOMINO
10 DOUGLASSVILLE
11 ATLANTA NORTH
12 BLOOMBURG

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WRIGHT PATMAN LAKE, TEXAS
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
DOMINO QUADRANGLE
SHEET NUMBER 6 OF 35


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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

5 WRIGHT PATMAN LAKE
11 ATLANTA NORTH
12 BLOOMBURG

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DOMINO, TEXAS
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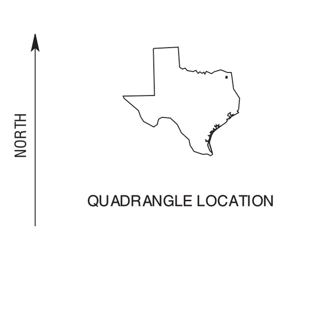
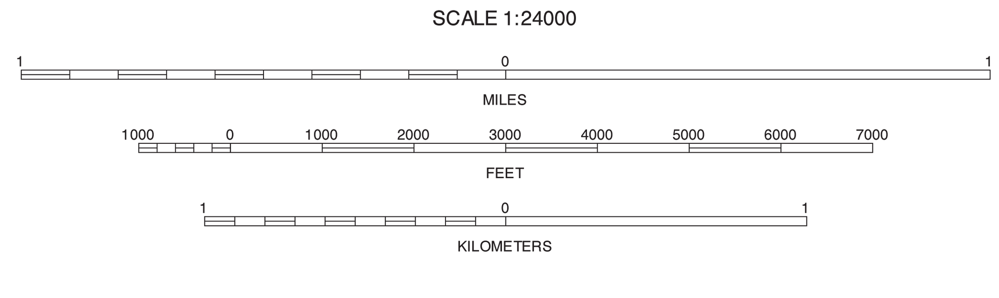
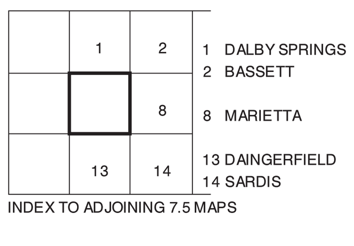
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.




SCALE 1:24000



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## NAPLES, TEXAS

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
MARIETTA QUADRANGLE
SHEET NUMBER 8 OF 35

94° 37′30″ — 94° 35′00″ — 94° 32′30″ — 94° 30′00″

33°15′00″


33°12′30″

33°10′00″

33°07′30″

94° 37′30″ — 94° 35′00″ — 94° 32′30″ — 94° 30′00″

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

1 DALBY SPRINGS
2 BASSETT
3 CORLEY
7 NAPLES
9 BRYANS MILL
13 DAINGERFIELD
14 SARDIS
15 CARTERVILLE

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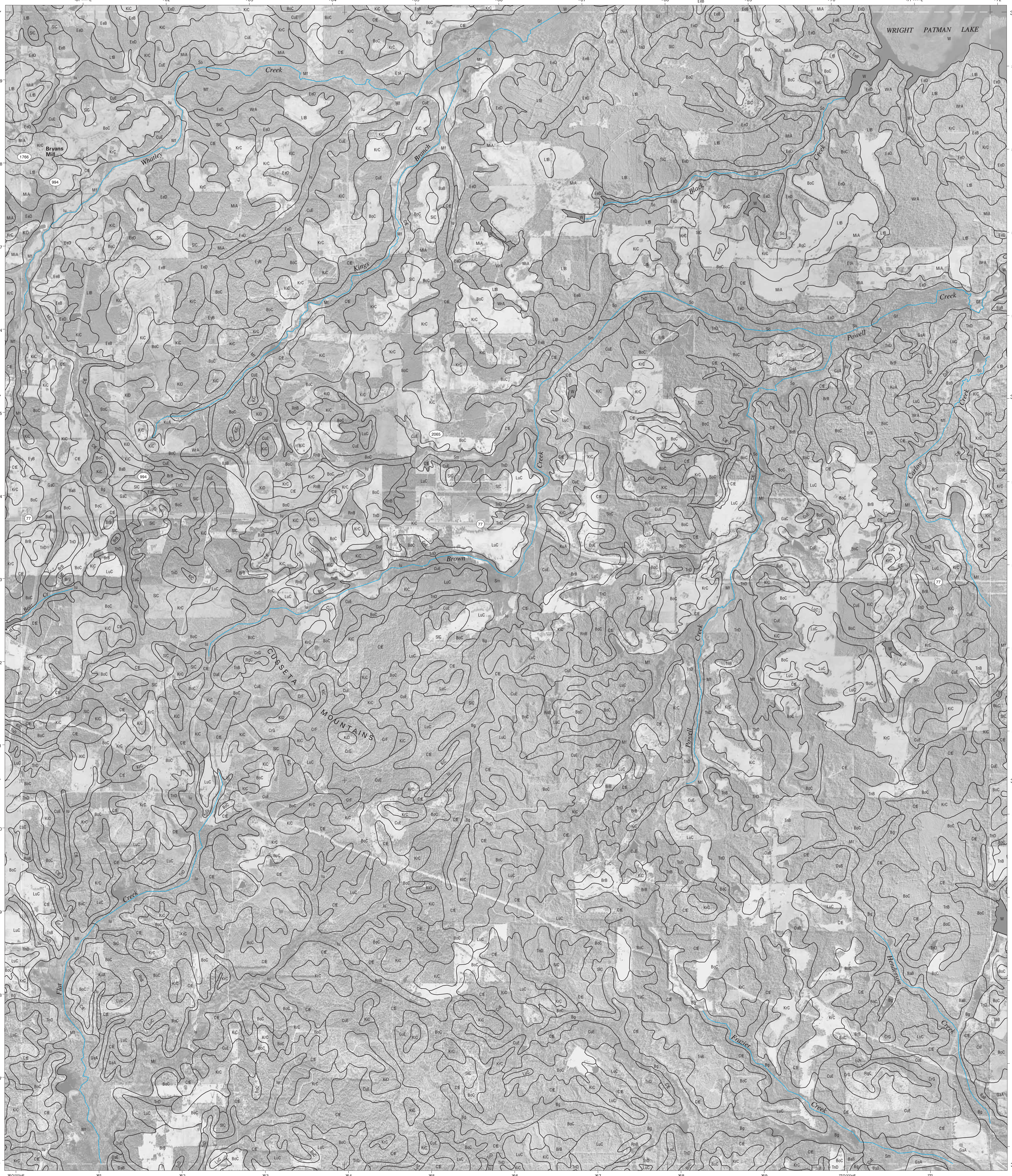
MARIETTA, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
BRYANS MILL QUADRANGLE
SHEET NUMBER 9 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 2 | 3 | 4 |
| 8 | | 10 |
| 14 | 15 | 16 |

2 BASSETT
3 CORLEY
4 MAUD
8 MARIETTA
10 DOUGLASSVILLE
14 SARDIS
15 CARTERVILLE
16 LINDEN

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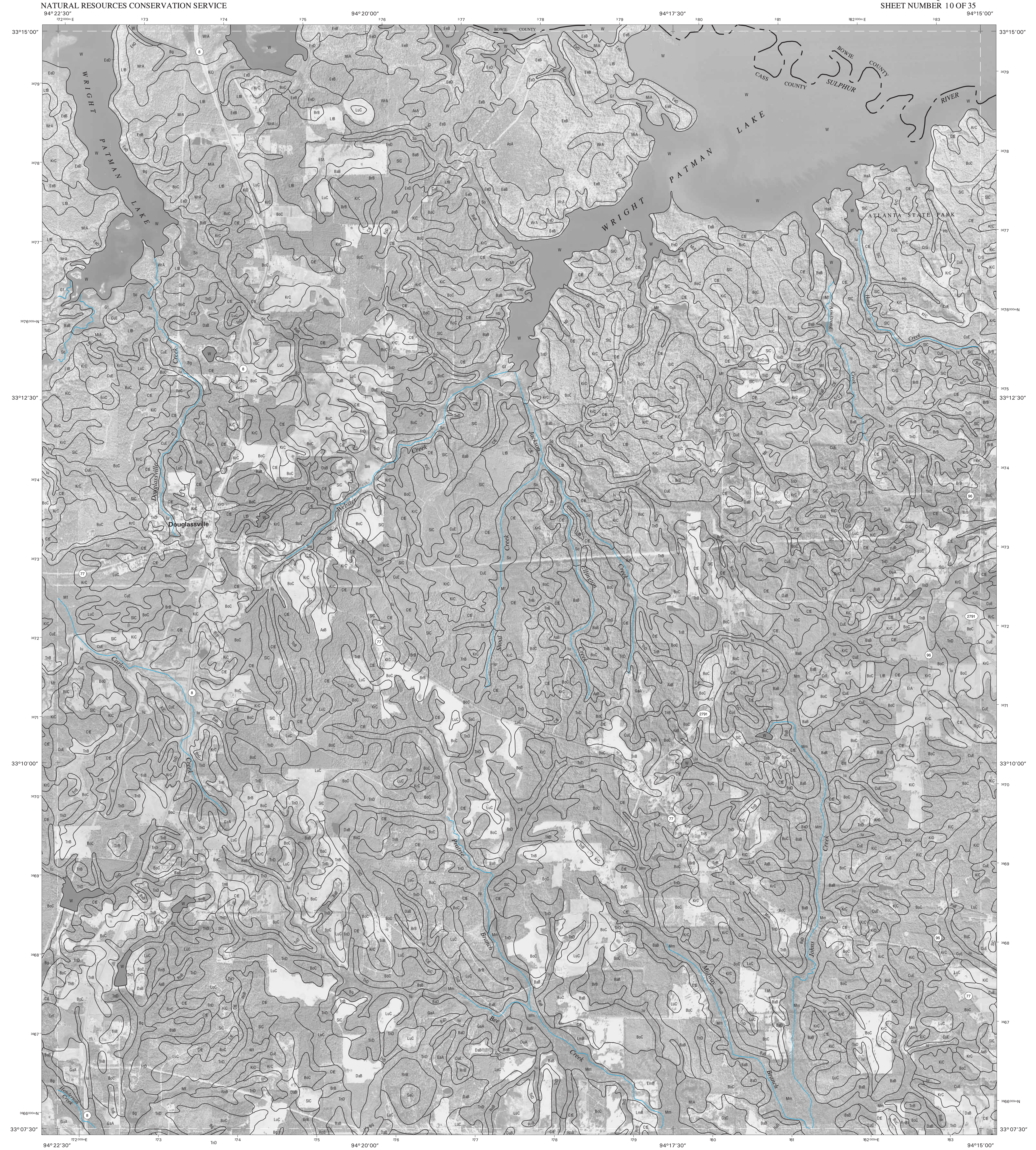
BRYANS MILL, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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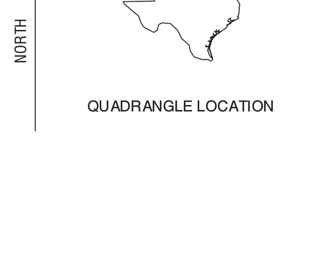
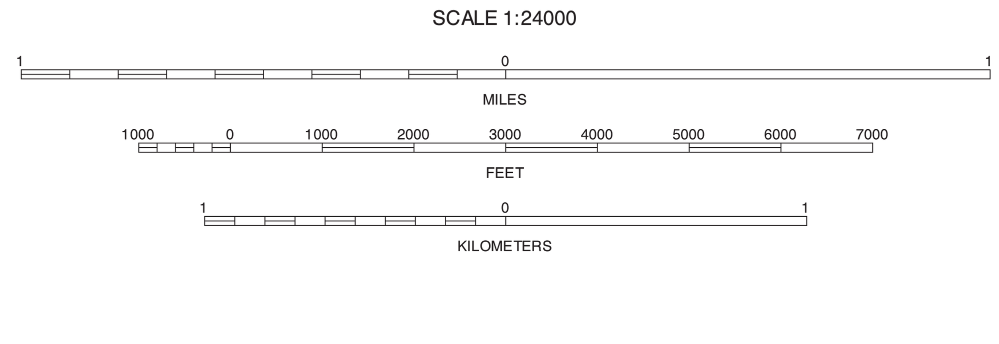
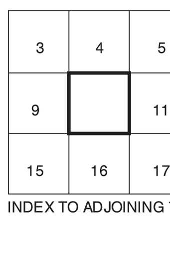



QUADRANGLE LOCATION

SCALE 1:24000

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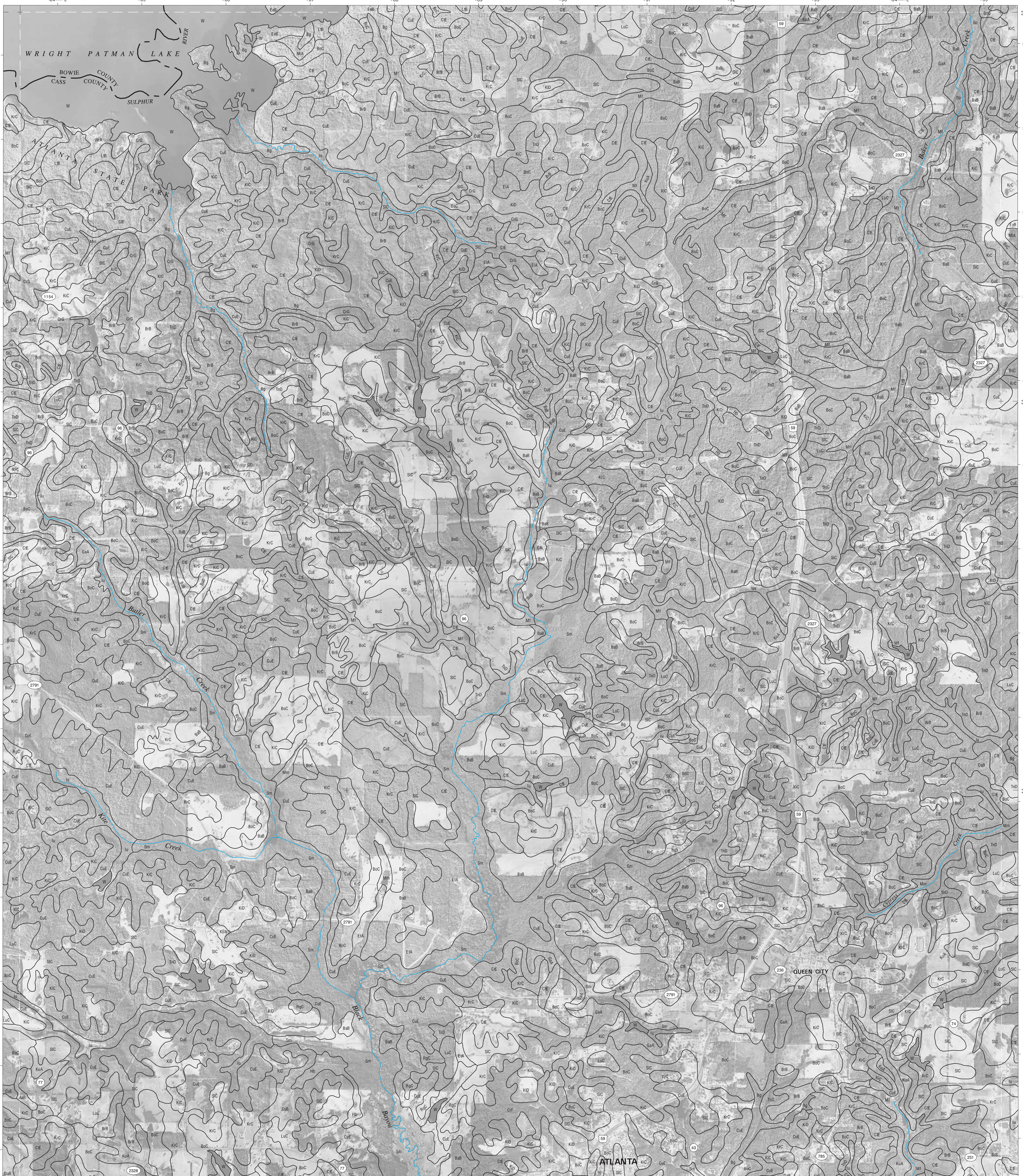
## DOUGLASSVILLE, TEXAS

7.5 MINUTE SERIES
SHEET NUMBER 10 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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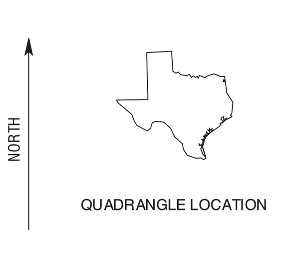
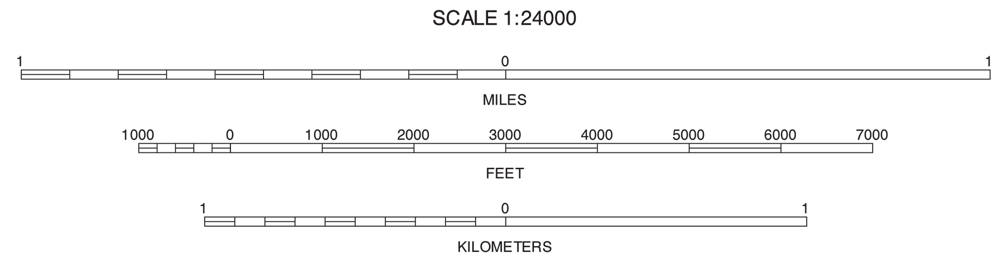



QUADRANGLE LOCATION

SCALE 1:24000




| | | |
|---|---|---|
| 4 | 5 | 6 |
| 10 | | 12 |
| 16 | 17 | 18 |

4 MAUD
5 WRIGHT PATMAN LAKE
6 DOMINO
10 DOUGLASSVILLE
12 BLOOMBURG
16 LINDEN
17 ATLANTA SOUTH
18 RAVANNA

INDEX TO ADJOINING 7.5 MAPS

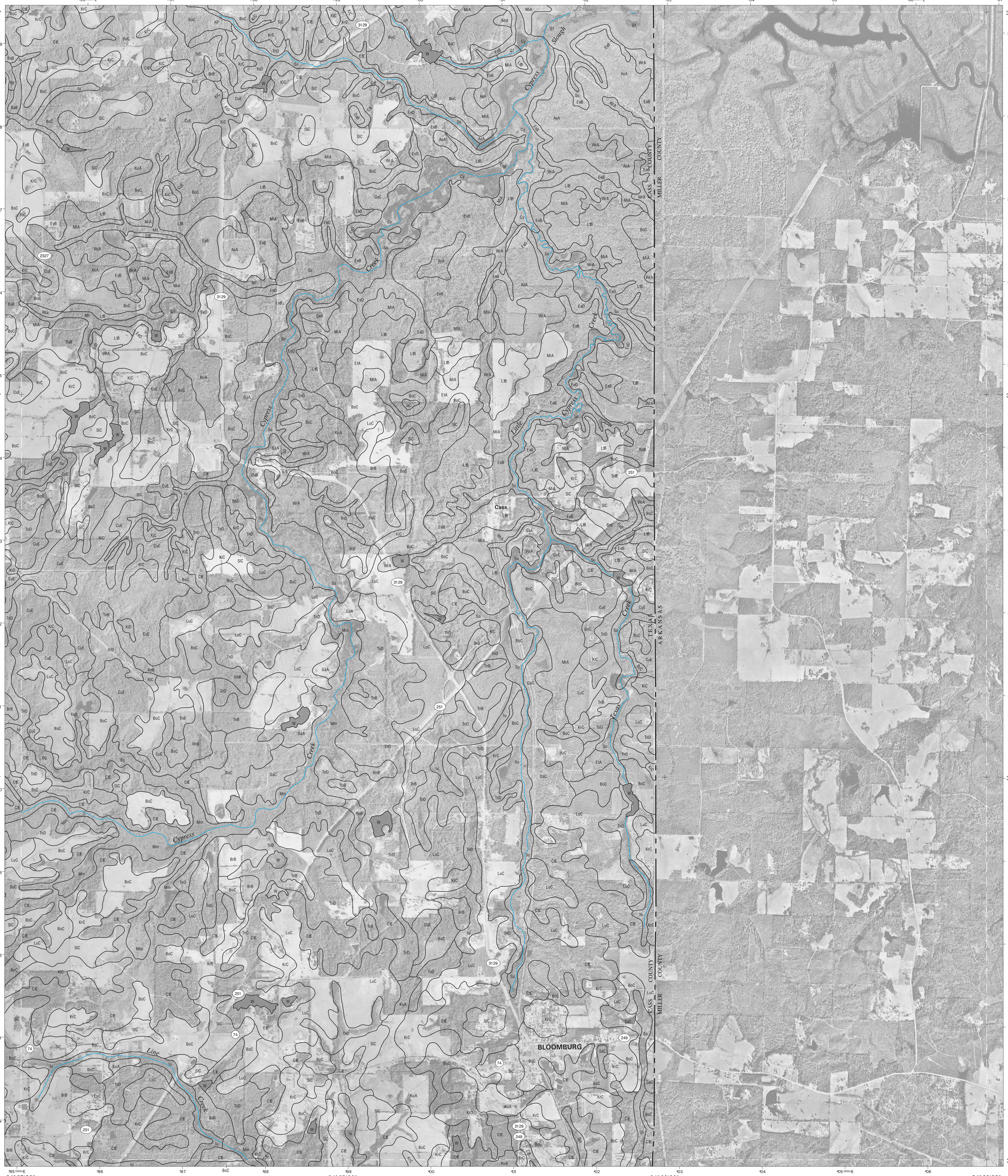
# ATLANTA NORTH, TEXAS

7.5 MINUTE SERIES
SHEET NUMBER 11 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
BLOOMBURG QUADRANGLE
SHEET NUMBER 12 OF 35

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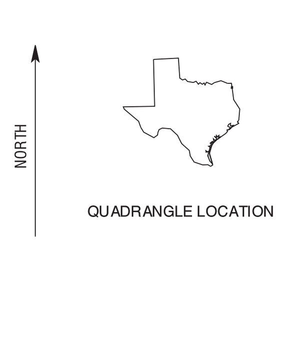
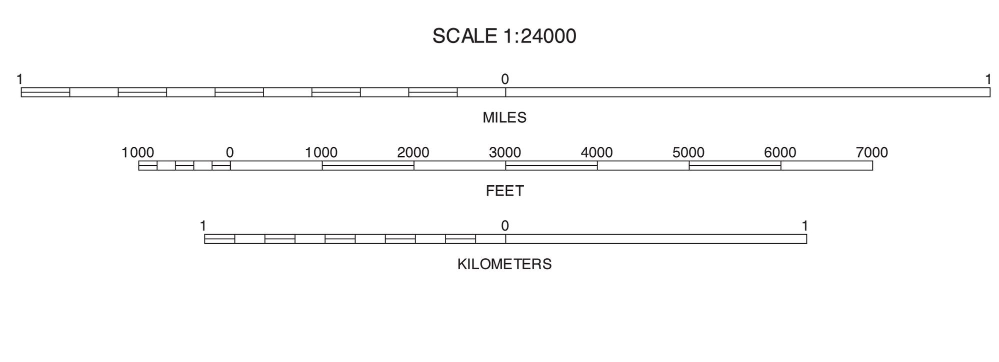
North American Datum of 1983 (NAD83). GRS80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.




| | | |
|---|---|---|
| 5 | 6 | |
| 11 | | |
| 17 | 18 | |

5 WRIGHT PATMAN LAKE
6 DOMINO
11 ATLANTA NORTH
17 ATLANTA SOUTH
18 RAVANNA

INDEX TO ADJOINING 7.5 MAPS

BLOOMBURG, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
DAINGERFIELD QUADRANGLE
SHEET NUMBER 13 OF 35


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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

7 NAPLES
8 MARIETTA
14 SARDIS
19 LONE STAR
20 AVINGER

INDEX TO ADJOINING 7.5 MAPS

DAINGERFIELD, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 35

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
SARDIS QUADRANGLE
SHEET NUMBER 14 OF 35


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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 7 | 8 | 9 |
| 13 | | 15 |
| 19 | 20 | 21 |

7 NAPLES
8 MARIETTA
9 BRYANS MILL
13 DAINGERFIELD
15 CARTERVILLE
19 LONE STAR
20 AVINGER
21 CUNNINGHAM CREEK

INDEX TO ADJOINING 7.5 MAPS

SARDIS, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 35

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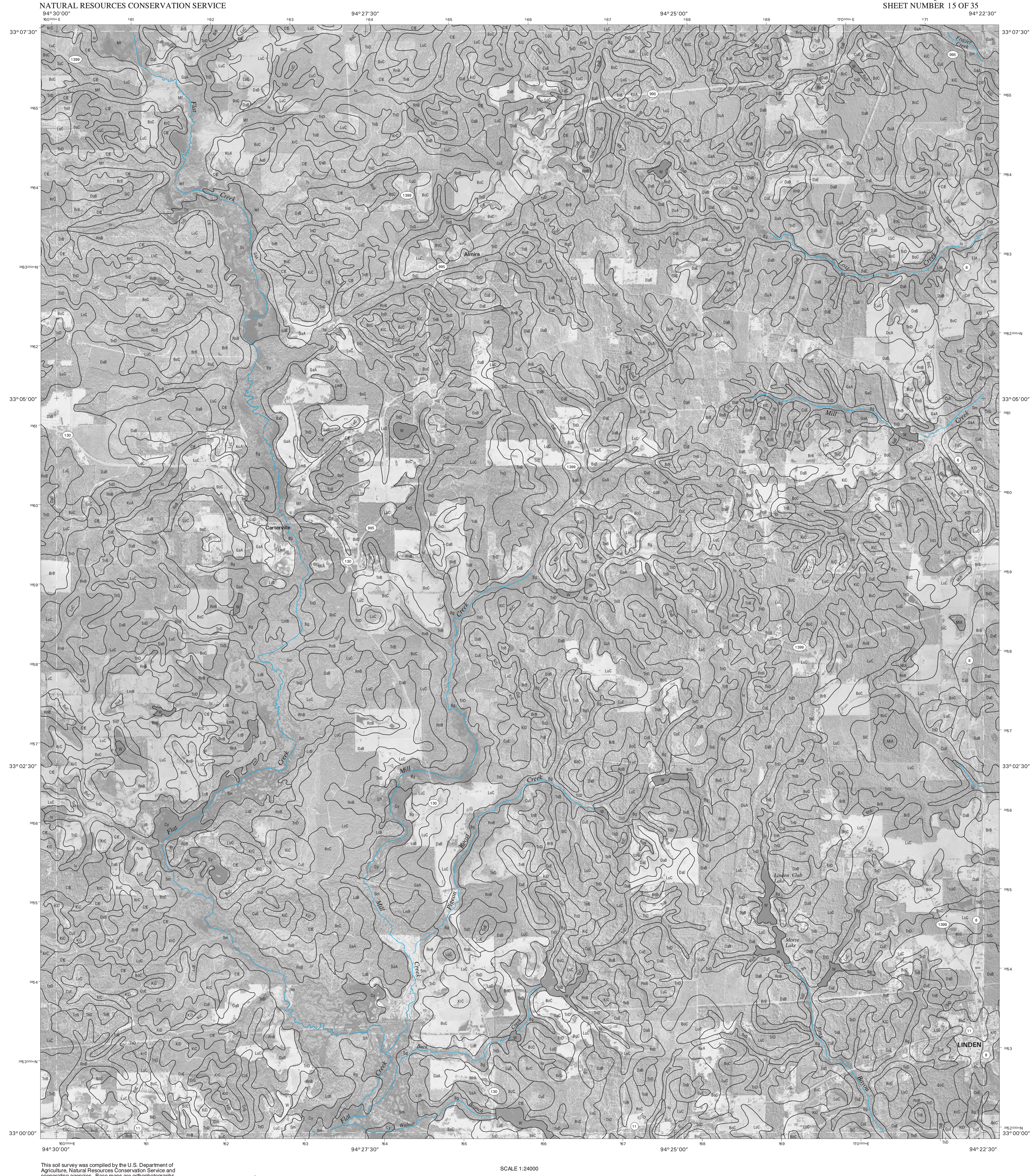
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
CARTERVILLE QUADRANGLE
SHEET NUMBER 15 OF 35

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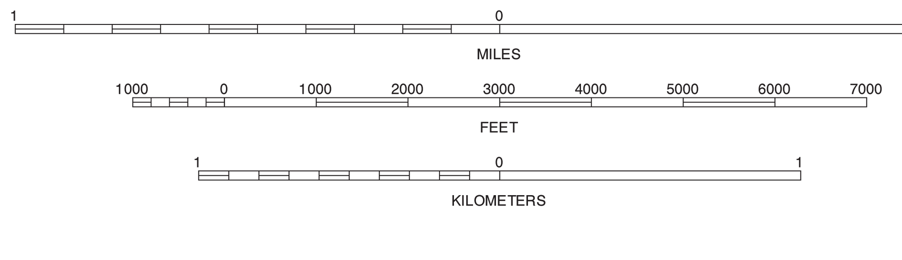
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.


| | | |
|---|---|---|
| 8 | 9 | 10 |
| 14 | | 16 |
| 20 | 21 | 22 |

8 MARIETTA
9 BRYANS MILL
10 DOUGLASSVILLE
14 SARDIS
16 LINDEN
20 AVINGER
21 CUNNINGHAM CREEK
22 LANIER

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CARTERVILLE, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE




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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 9 | 10 | 11 |
| 15 | | 17 |
| 21 | 22 | 23 |

9 BRYANS MILL
10 DOUGLASSVILLE
11 ATLANTA NORTH
15 CARTERVILLE
17 ATLANTA SOUTH
21 CUNNINGHAM CREEK
22 LANIER
23 KILDARE

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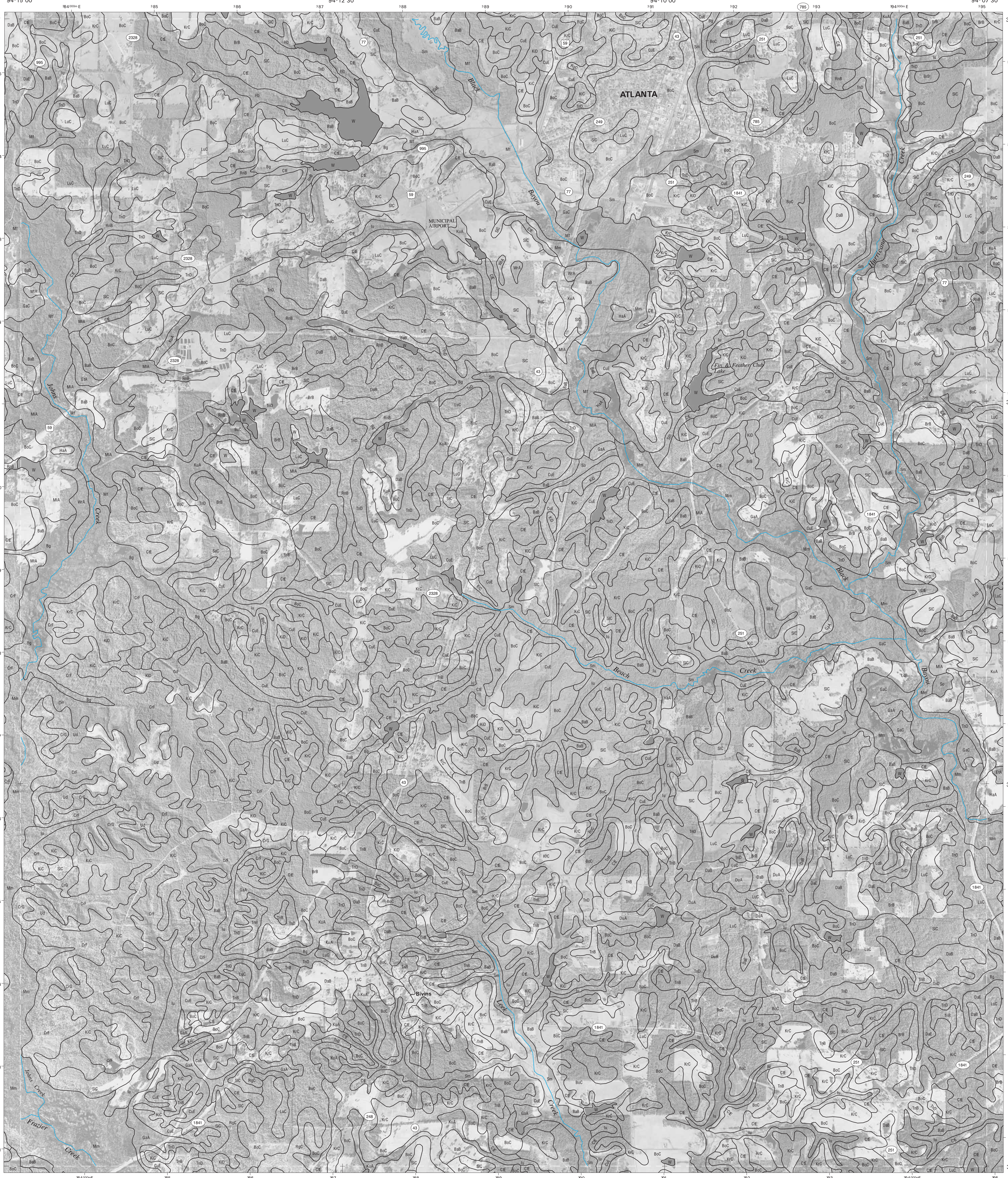
LINDEN, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 16 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

| | | |
|---|---|---|
| 10 | 11 | 12 |
| 16 | | 18 |
| 22 | 23 | 24 |

10 DOUGLASSVILLE
11 ATLANTA NORTH
12 BLOOMBURG
16 LINDEN
18 RAVANNA
22 LANIER
23 KILDARE
24 MCLEOD

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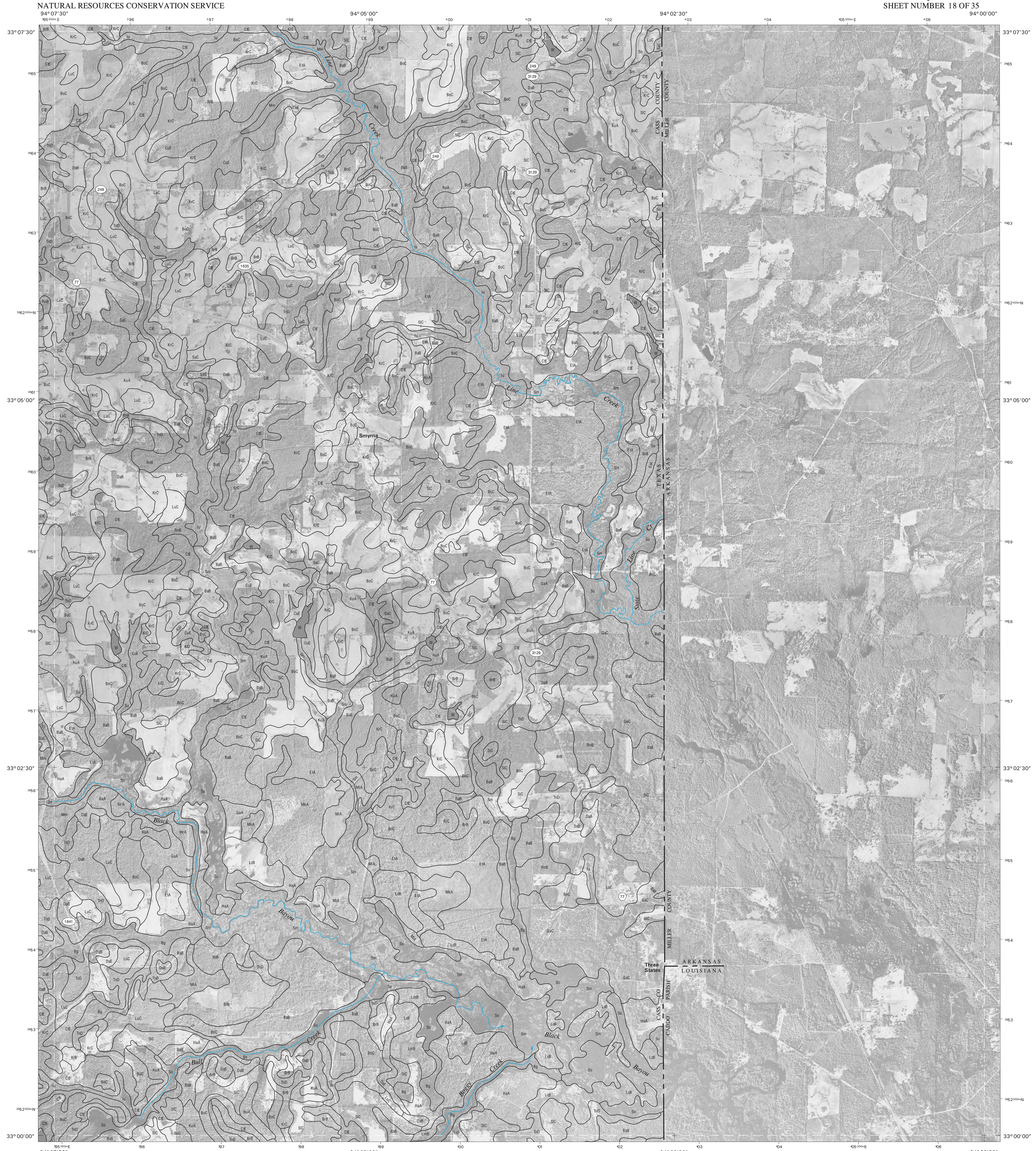
ATLANTA SOUTH, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
RAVANNA QUADRANGLE
SHEET NUMBER 18 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 11 | 12 | |
| 17 | | |
| 23 | 24 | |

11 ATLANTA NORTH
12 BLOOMBURG
17 ATLANTA SOUTH
23 KILDARE
24 MCLEOD

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RAVANNA, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
LONE STAR QUADRANGLE
SHEET NUMBER 19 OF 35


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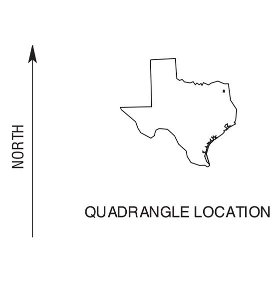
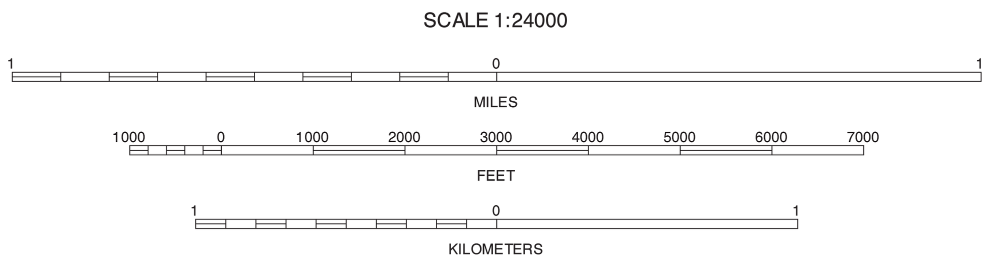
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.




| | | |
|---|---|---|
| | 13 | 14 |
| | ■ | 20 |
| | 25 | 26 |

13 DAINGERFIELD
14 SARDIS
20 AVINGER
25 ORE CITY
26 LASSATER

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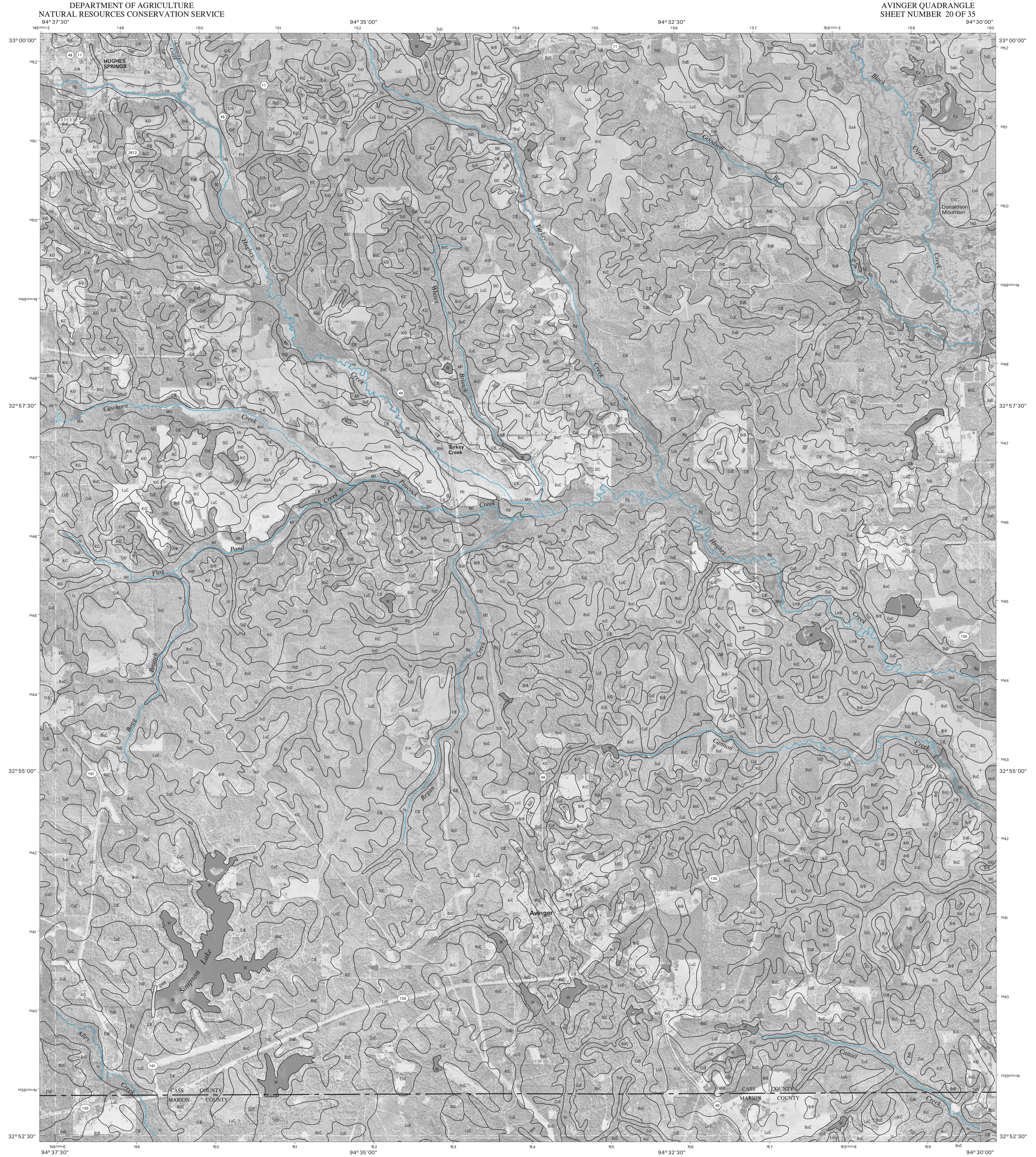
LONE STAR, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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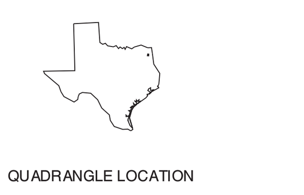
North American Datum of 1983 (NAD83). GRS80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

| | | |
|---|---|---|
| 13 | 14 | 15 |
| 19 | | 21 |
| 25 | 26 | 27 |

13 DAINGERFIELD
14 SARDIS
15 CARTERVILLE
19 LONE STAR
21 CUNNINGHAM CREEK
25 ORE CITY
26 LASSATER
27 KELLYVILLE

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AVINGER, TEXAS
7.5 MINUTE SERIES
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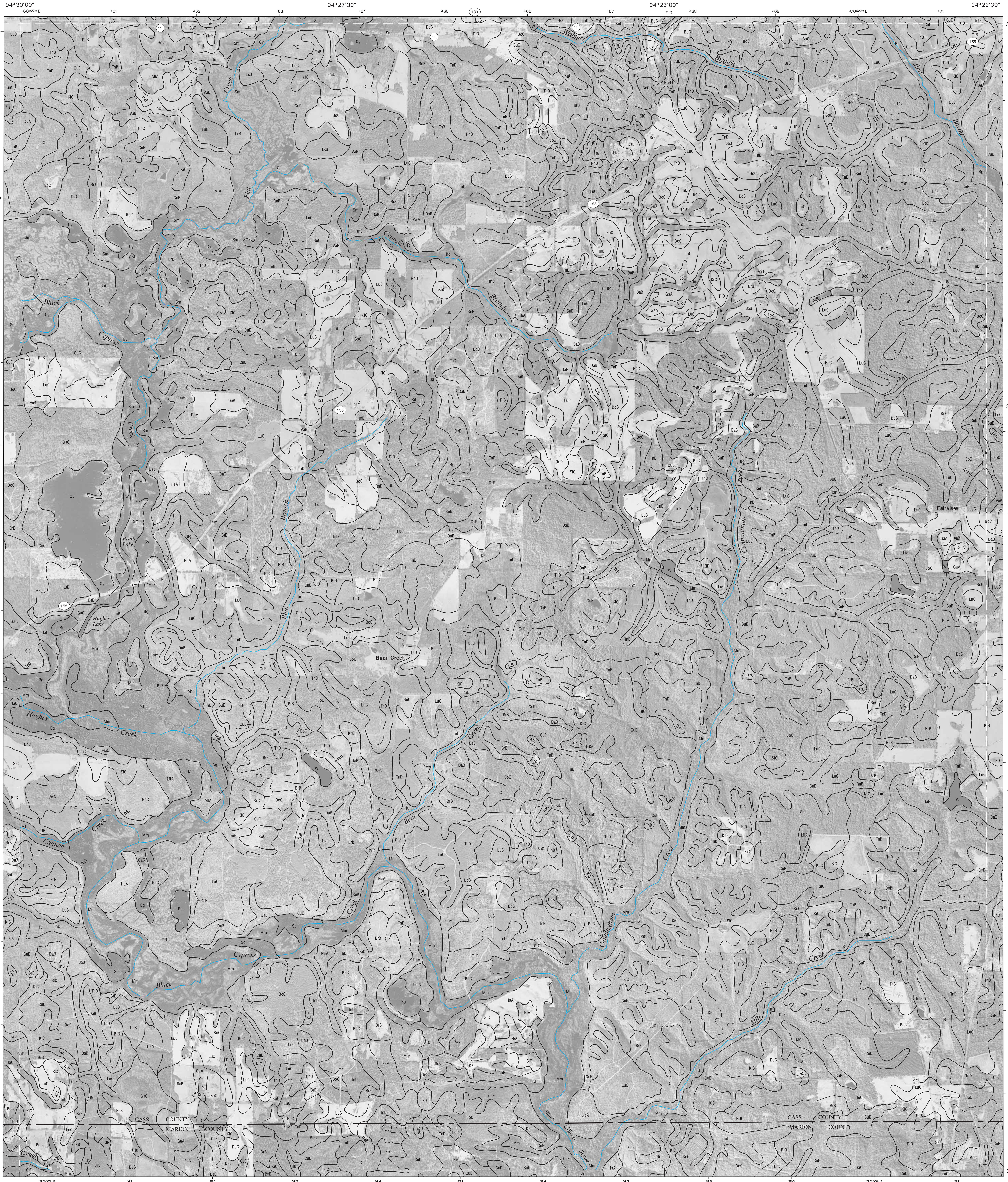
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
CUNNINGHAM CREEK QUADRANGLE
SHEET NUMBER 21 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| 14 | 15 | 16 |
|---|---|---|
| 20 | | 22 |
| 26 | 27 | 28 |

14 SARDIS
15 CARTERVILLE
16 LINDEN
20 AVINGER
22 LANIER
26 LASSATER
27 KELLYVILLE
28 JEFFERSON

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CUNNINGHAM CREEK, TEXAS
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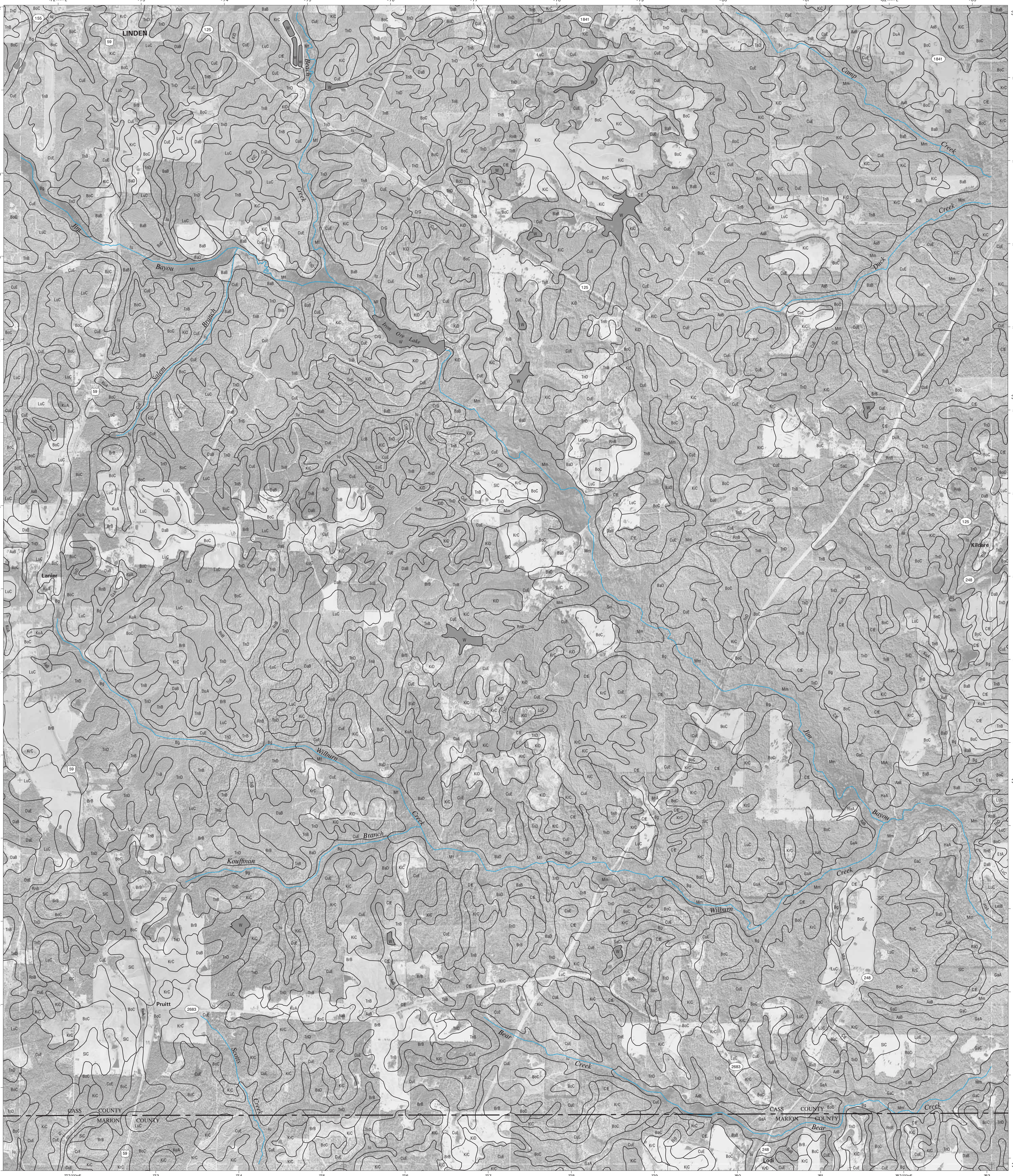
SHEET NUMBER 21 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
LANIER QUADRANGLE
SHEET NUMBER 22 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

| | | |
|---|---|---|
| 15 | 16 | 17 |
| 21 | | 23 |
| 27 | 28 | 29 |

15 CARTERVILLE
16 LINDEN
17 ATLANTA SOUTH
21 CUNNINGHAM CREEK
23 KILDARE
27 KELLYVILLE
28 JEFFERSON
29 SMITHLAND

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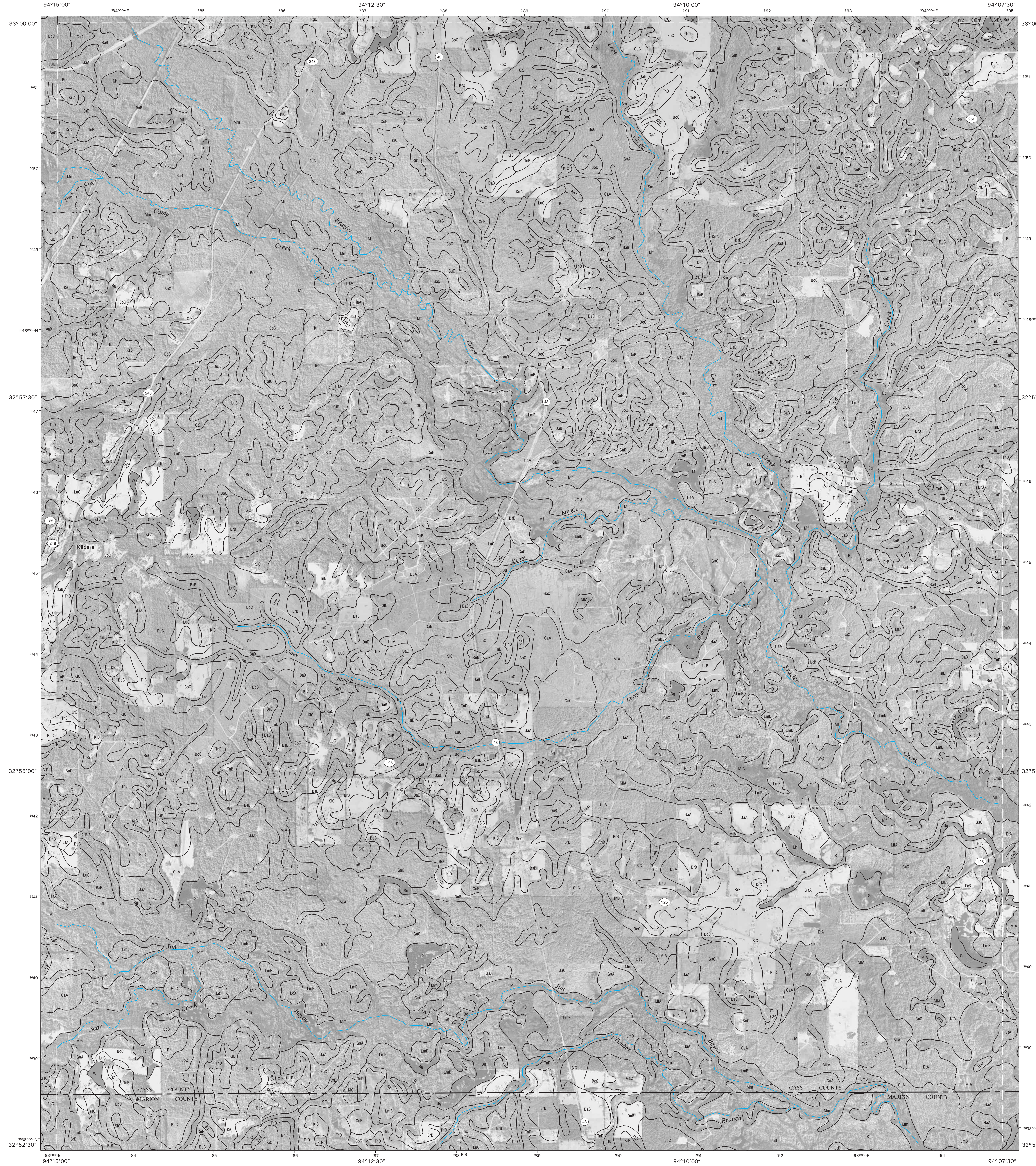
LANIER, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
KILDARE QUADRANGLE
SHEET NUMBER 23 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

| | | |
|---|---|---|
| 16 | 17 | 18 |
| 22 | | 24 |
| 28 | 29 | 30 |

16 LINDEN
17 ATLANTA SOUTH
18 RAVANNA
22 LANIER
24 MCLEOD
28 JEFFERSON
29 SMITHLAND
30 TREES

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# KILDARE, TEXAS

7.5 MINUTE SERIES
SHEET NUMBER 23 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
MCLEOD QUADRANGLE
SHEET NUMBER 24 OF 35


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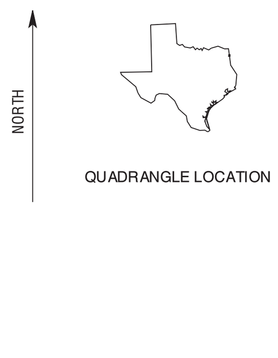
North American Datum of 1983 (NAD83). GRS80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.




SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

| | | |
|---|---|---|
| 17 | 18 | |
| 23 | | |
| 29 | 30 | |

17 ATLANTA SOUTH
18 RAVANNA
23 KILDARE
29 SMITHLAND
30 TREES

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# MCLEOD, TEXAS

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
ORE CITY QUADRANGLE
SHEET NUMBER 25 OF 35


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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| | 19 | 20 |
| | | 26 |
| | | 31 |

19 LONE STAR
20 AVINGER
26 LASSATER
31 HARLETON

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ORE CITY, TEXAS
7.5 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MARION AND CASS COUNTIES, TEXAS
LASSATER QUADRANGLE
SHEET NUMBER 26 OF 35


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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 19 | 20 | 21 |
| 25 | | 27 |
| | 31 | 32 |

19 LONE STAR
20 AVINGER
21 CUNNINGHAM CREEK
25 ORE CITY
27 KELLYVILLE
31 HARLETON
32 MARSHALL NW

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LASSATER, TEXAS
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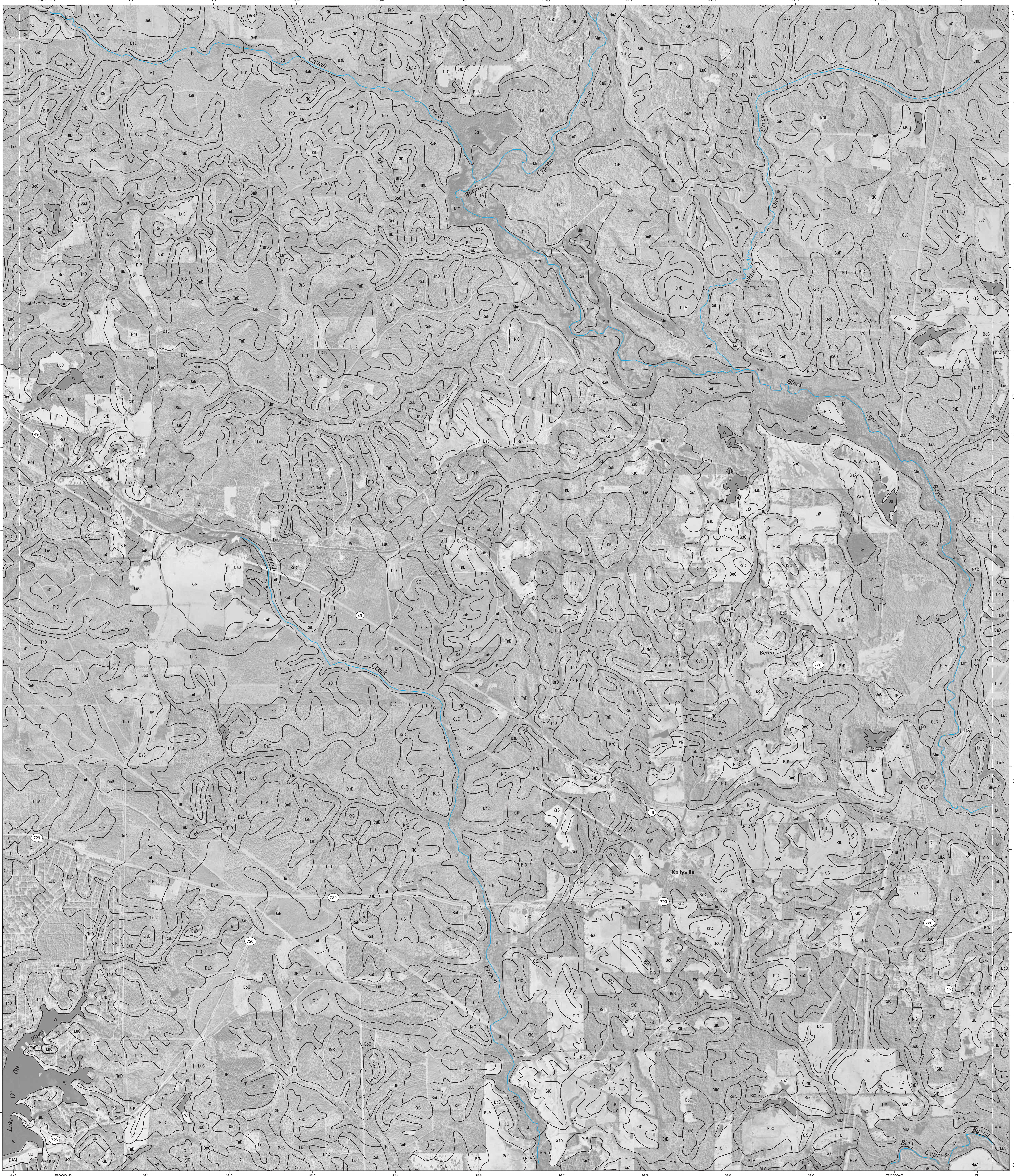
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
KELLYVILLE QUADRANGLE
SHEET NUMBER 27 OF 35

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 20 | 21 | 22 |
| 26 | | 28 |
| 31 | 32 | 33 |

20 AVINGER
21 CUNNINGHAM CREEK
22 LANIER
26 LASSATER
28 JEFFERSON
31 HARLETON
32 MARSHALL NW
33 WOODLAWN

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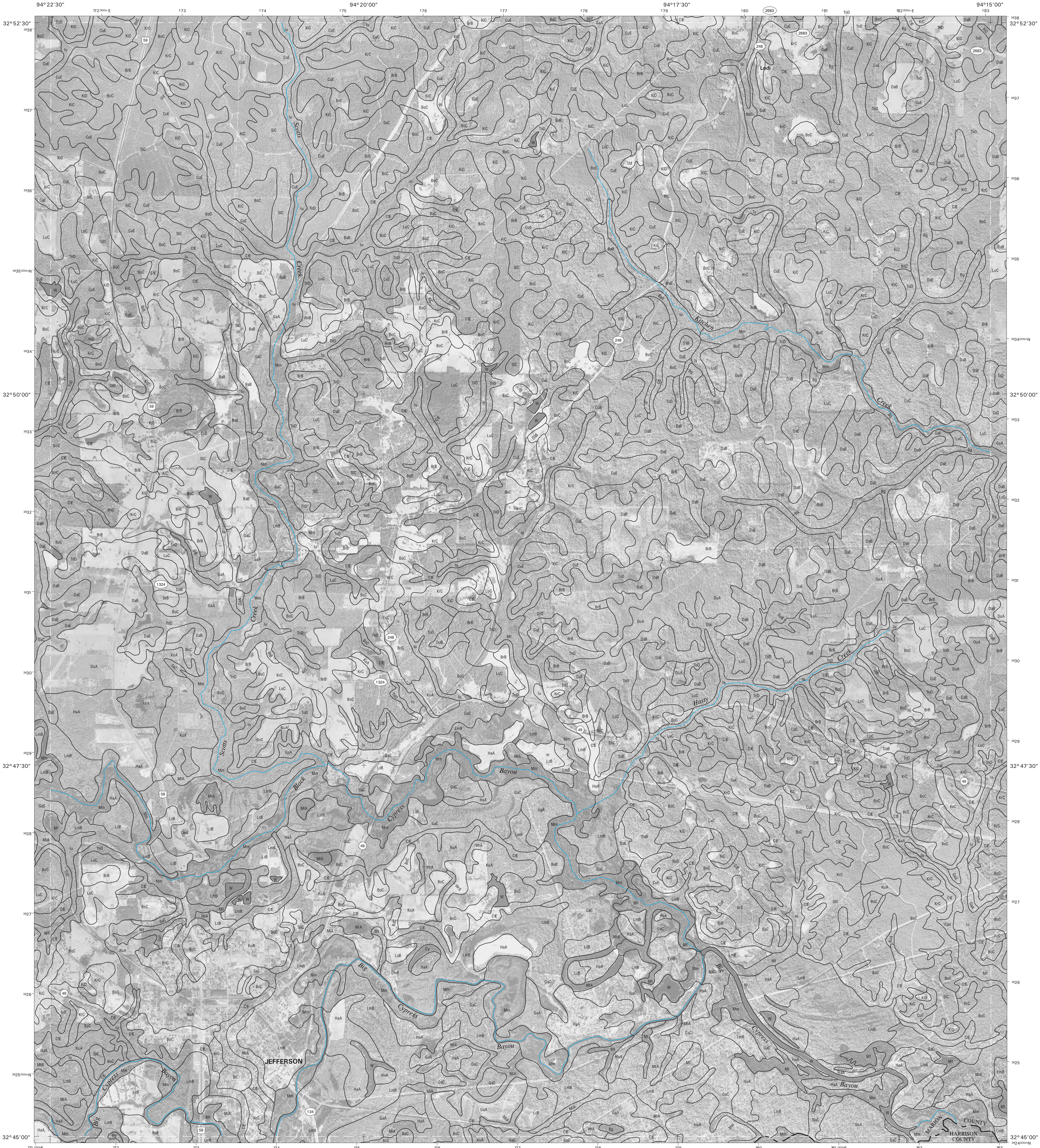
KELLYVILLE, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 27 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
JEFFERSON QUADRANGLE
SHEET NUMBER 28 OF 35

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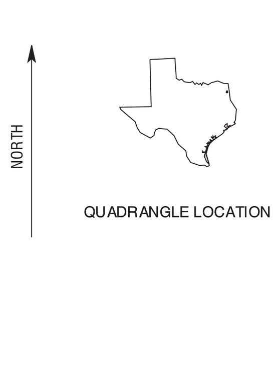
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

| 21 | 22 | 23 |
|---|---|---|
| 27 | | 29 |
| 32 | 33 | 34 |

21 CUNNINGHAM CREEK
22 LANIER
23 KILDARE
27 KELLYVILLE
29 SMITHLAND
32 MARSHALL NW
33 WOODLAWN
34 KARNACK

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# JEFFERSON, TEXAS

7.5 MINUTE SERIES
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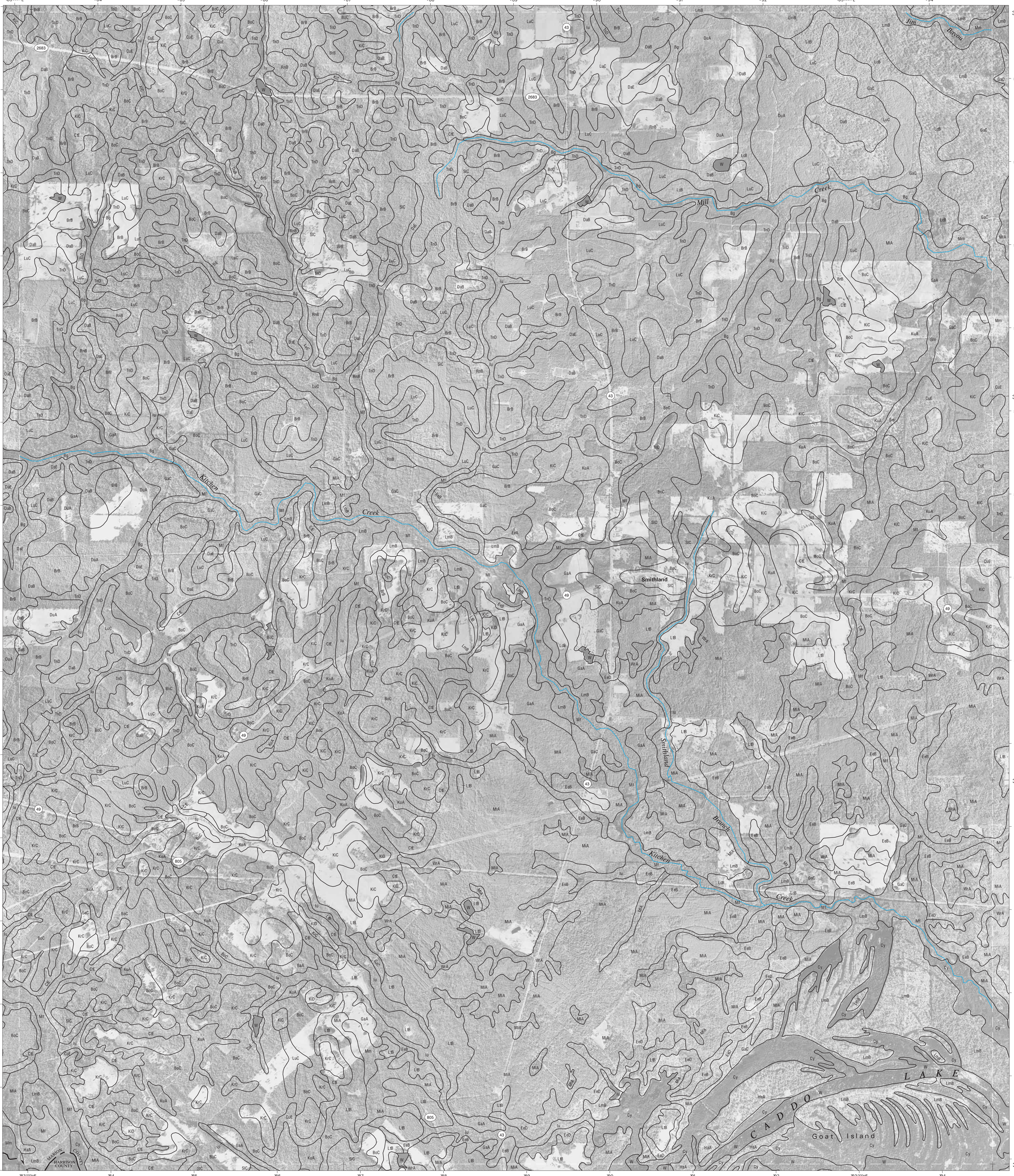
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
SMITHLAND QUADRANGLE
SHEET NUMBER 29 OF 35

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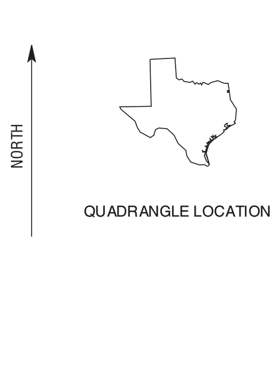
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUADRANGLE LOCATION

SCALE 1:24000

1 — 0 — 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 — 0 — 1
KILOMETERS

| 22 | 23 | 24 |
| --- | --- | --- |
| 28 | | 30 |
| 33 | 34 | 35 |

22 LANIER
23 KILDARE
24 MCLEOD
28 JEFFERSON
30 TREES
33 WOODLAWN
34 KARNACK
35 POTTERS POINT

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SMITHLAND, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 29 OF 35

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARION AND CASS COUNTIES, TEXAS
TREES QUADRANGLE
SHEET NUMBER 30 OF 35


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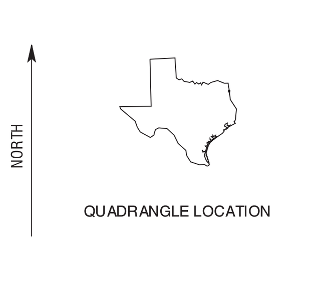
North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.




SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 23 | 24 | |
| 29 | | |
| 34 | 35 | |

23 KILDARE
24 MCLEOD
29 SMITHLAND
34 KARNACK
35 POTTERS POINT

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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

HARLETON, TEXAS
7.5 MINUTE SERIES
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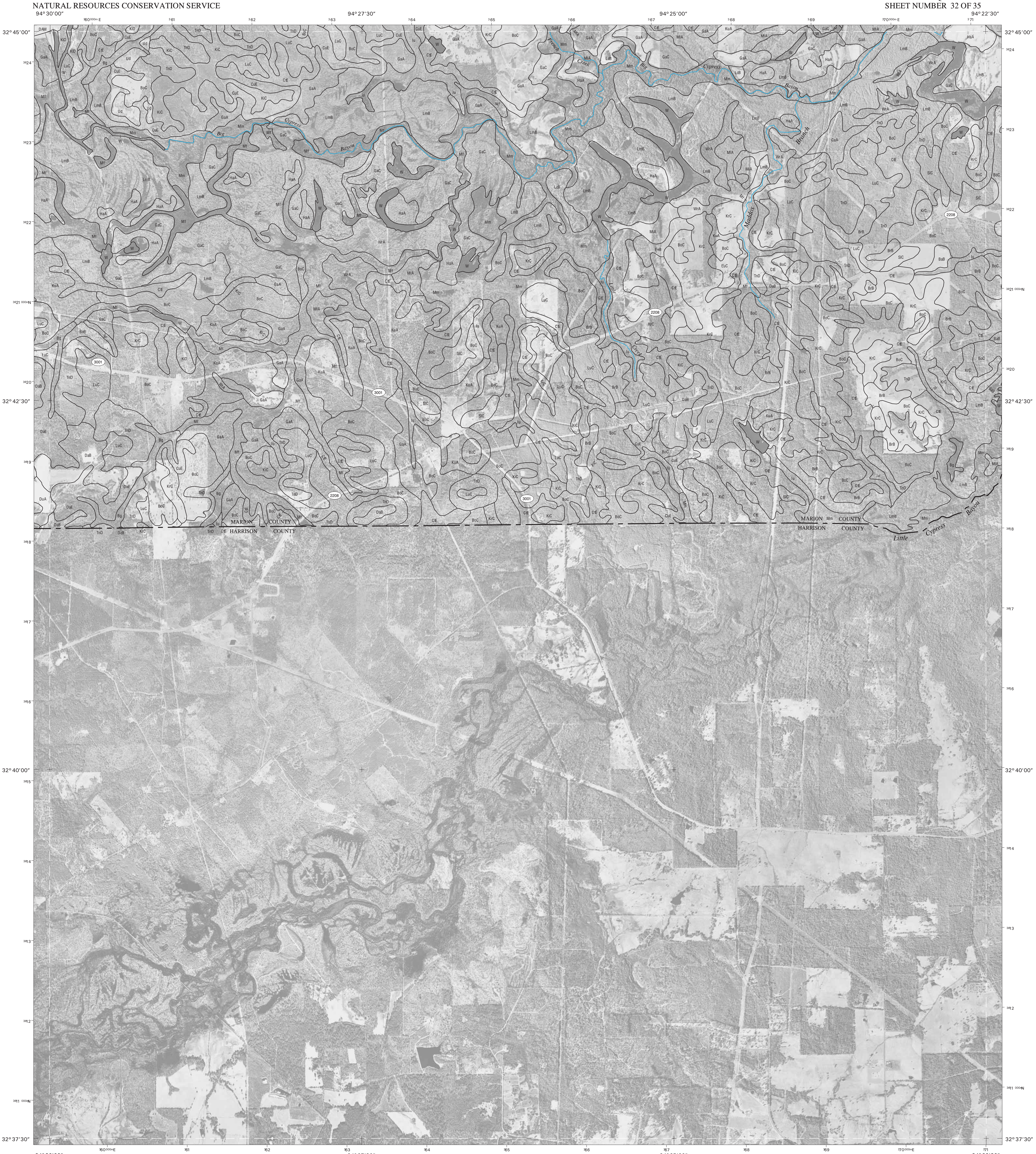
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 15. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

26 LASSATER
27 KELLYVILLE
28 JEFFERSON
31 HARLETON
33 WOODLAWN

INDEX TO ADJOINING 7.5 MAPS

MARSHALL NW, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 32 OF 35

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MARION AND CASS COUNTIES, TEXAS
WOODLAWN QUADRANGLE
SHEET NUMBER 33 OF 35


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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 27 | 28 | 29 |
| 32 | | 34 |
| | | |

27 KELLYVILLE
28 JEFFERSON
29 SMITHLAND
32 MARSHALL NW
34 KARNACK

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WOODLAWN, TEXAS
7.5 MINUTE SERIES
SHEET NUMBER 33 OF 35

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MARION AND CASS COUNTIES, TEXAS
KARNACK QUADRANGLE
SHEET NUMBER 34 OF 35


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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | |
|---|---|---|
| 28 | 29 | 30 |
| 33 | | 35 |
| | | |

28 JEFFERSON
29 SMITHLAND
30 TREES
33 WOODLAWN
35 POTTERS POINT

INDEX TO ADJOINING 7.5 MAPS

# KARNACK, TEXAS

7.5 MINUTE SERIES
SHEET NUMBER 34 OF 35

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MARION AND CASS COUNTIES, TEXAS
POTTERS POINT QUADRANGLE
SHEET NUMBER 35 OF 35


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North American Datum of 1983 (NAD83). GRS80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 15.
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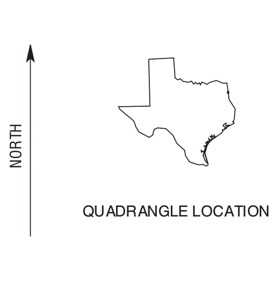

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

| | | | |
|---|---|---|---|
| 29 | 30 | | 29 SMITHLAND<br>30 TREES |
| 34 | | | 34 KARNACK |
| | | | |

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# POTTERS POINT, TEXAS

7.5 MINUTE SERIES
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